

UC 12293 135

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/Biochem College: NSM  
 2. Faculty Contact Person: Ogletree Telephone: 3-1016 Email: mogletree@uh.edu

APPROVED SEP - 4 2013  
MM

3. Course Information on New/Revised course:  
 • Instructional Area / Course Number / Long Course Title:  
BIOL / 1361 / Introduction to Biological Science  
 • Instructional Area / Course Number / Short Course Title (30 characters max.)  
BIOL / 1361 / INTRO TO BIOLOGICAL SCIENCE  
 • SCH: 3 Level: PR CIP Code: 26.0101.0002 Lect Hrs: 3 Lab Hrs: 0

RECEIVED APR - 4 2013  
JR

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). (formerly BIOL 1431) Prerequisite: MATH 1310 or equivalent. Credit may not be received for both BIOL 1361:1362 and 1310:1320. Designed for science majors and preprofessional students.

10. Introduction to biological science, including biochemistry, cellular and molecular biology, genetics, physiology, ecology, evolution, and behavior. \_\_\_\_\_  
 Print/Type Name: \_\_\_\_\_

## REQUEST FOR COURSES IN THE CORE CURRICULUM

Originating Department or College: Department of Biology & Biochemistry

Person Making Request: Monique Ogletree, PhD

Telephone: 713-743-1016

Email: mogletree@uh.edu

Dean's Signature: \_\_\_\_\_

Date: 2-10-13

Course Number and Title: BIOL 1361 Introduction to Biological Science

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):

By the completion of the course, students will be able to:

1. Demonstrate mastery of the fundamental chemistry of biologically important molecules.
2. Relate cell structures to biological function and describe their role in metabolism.
3. Recognize the commonalities between organ systems of diverse animal species.
4. Work with peers to apply content knowledge in problem solving and effectively communicate solutions and reasoning to classmates and instructors.

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:

1. This course has four major exams and two to four critical thinking questions will be added on each exam (see appendix for sample questions).
2. There will also be one or two critical thinking questions added to each homework assignment (through MasteringBiology, an online system). There are a total of 8 homework assignments.
3. In the smaller Honors Sections, critical thinking skills will also be evaluated using at least one assignment in which students analyze experiments from the scientific literature.

#### Communication Skills:

1. There will be one, two page paper assigned to each student. One quarter of the class will have the due date assigned by the date of the first exam. The second quarter of the class will have the due date of the two page paper assigned before exam two, third quarter before exam three and the final quarter assigned before exam 4. The spread allows the professor the ability to handle 500+ students (125 papers due per exam).
2. In the smaller Honors sections, at least one assignment will require students to summarize a research article following a specified format. Additional written work may also be used to evaluate communications skills for students in the Honors sections.

#### Empirical & Quantitative Skills:

1. Two to four questions will be added to each of four exams that measure the students empirical & quantitative skills. Since the course has four examples, the number of questions that will be used by the end of the semester will range from eight to sixteen (see appendix for sample questions).
2. There will also be at least 1 question that measures empirical & quantitative skill added to each homework assignment (through Mastering Biology, an online system). There will be a total of 8 assignments totaling at least eight questions.
3. In the smaller Honors sections, empirical and quantitative skills may also be evaluated through homework assignments in which they analyze experiments from the scientific literature.

Teamwork:

1. Clicker question will be given using a question-pair format. Initially students will be asked a question and instructed to answer independently. The spread of responses will be displayed in a bar graph format. Then the question will be posted again, except this time students will be allowed to discuss results with other classmates. The purpose of this exercise is for students to discuss problem and solutions as a group of two or more students. The class will be polled again and hopefully more students will have the correct answers. After results are shown, questions will be discussed with entire class.
2. Student will be given a list of 20 topics that involve social responsibility (examples include: the advantage of the flu vaccine, protection from the Nile virus, smoking on campus, germ awareness (should we use sanitizer), security on campus, the benefit and detriment of caffeine drinks, is the ozone layer still an issue, will required genetic testing at the time of insurance enrollment be advantageous to the community or industry, when should cloning be an option, etc.). Students will be asked to work in teams of 5-10 to create a flyer that educates the community about different social issues. This team work project will allow students to address many of the social issues that influence the health and well being of our communities.
3. In the smaller Honors sections, students will work in groups of 3-5 to create work related to experimental data that they are given. This may involve proposing hypotheses and experiments to test them, or analyzing data from scientific experiments as a group. In either case, the group will present its work to classmates and the instructor, either orally or by posting to the course discussion page on Blackboard.

Social Responsibility:

[Click here to enter text.](#)

Personal Responsibility:

[Click here to enter text.](#)

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

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

Assignments in Mastering Biology (the online system)  
specific exam questions (See appendix for examples).

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

BIOL 1361 - INTRODUCTION TO BIOLOGICAL SCIENCES – FALL 2012

**Instructor:** Monique Ogletree, PhD    **Email:** mogletree@uh.edu  
**Office:** Room 242J in the Science & Research Building 2 (SR2)    **Phone:** 713-743-4102  
**Office Hours:** 12:30 – 1:30pm on Tuesday & Thursday; or by appointment  
**Location & Time:** Room SEC100 (Section 14386) Tuesday & Thursday 2:30-4:00 pm  
**Recommended Text:** Biology 9<sup>th</sup> Edition by Campbell & Reece

Fall 2012 Course Schedule

WEEK	DATE	TOPIC	CH
1	Aug 28	Course Information	
	30	Themes in the Study of Life	1
2	Sept 4	Chemical Content of Life; <i>last day to add class</i>	2
	6	Water & Fitness of the Environment	3
3	11	Carbon & Molecular Diversity of Life; **	4
	13	Bimolecules 1 (Carbohydrates/Lipids)	5
4	18	Bimolecules 2 (Proteins/Nucleic Acids)	5
	20	<i>Catchup; Review</i>	
5	25	<b>Exam 1 (Chapters 1-5); CSSP programming</b>	
	27	Tour of the Cell	6
6	Oct 2	Membrane Structure & Function	7
	4	Introduction to Metabolism	8
7	9	Cellular Respiration	9
	11	Photosynthesis	10
8	16	<i>Catchup; Review</i>	
	18	Cell Communication	11
9	23	<b>Exam 2 (Chapters 6-10)</b>	
	25	Animal Form & Function	40
10	30	Hormones & Endocrine System	45
	Nov 1	Neurons, Synapses & Signaling: ***	48
11	6	Nervous System	49
	8	<i>Catchup; Review</i>	
12	13	<b>Exam 3 (Chapters 11, 40, 45, 48, 49)</b>	
	15	Sensory & Motor Mechanisms	50
13	20	Animal Nutrition	41
	22	<b>THANKSGIVING HOLIDAY: Nov 21-24</b>	
14	27	Circulation & Gas Exchange	42
	29	Osmoregulation Secretion	44
15	Dec 4	Animal Reproduction	46
	6	<i>Catchup; Review</i>	
17	13	<b>EXAM 4 (Chapters 50, 41, 42, 44, 46)</b>	2-5pm

\* Schedule may change as the course progresses



### **Course Description**

BIOL 1361 is the first semester of a two-part *Introduction to Biological Science* course that is required of biology and biochemistry majors. It is a prerequisite for all advanced courses in biology and is often taken as an elective by students majoring in other natural and social sciences. Enrollment in this course requires MATH 1310 or its equivalent. The goal of this course is to introduce students to basic concepts of biology and prepare them for upper level biology and biochemistry course work. BIOL 1361 (first semester) focuses on biochemistry, cell biology, and physiology, while BIOL 1362 (second semester) focuses on genetics, biotechnology, evolution, and ecology.

This BIOL 1361 section has been selected to pilot a new program supported by a Texas Higher Education Coordinating Board **College Student Success Program (CSSP) grant**. This section of the course will include a greater variety of in-class activities beyond the traditional lecture. Some of these activities include the option of retaking the first exam, free recitation study groups, bio-lunches with faculty members and a mandatory field trip. I guarantee that this section will create assistance to those who are having academic difficulties early on in the semester and a worthwhile opportunity for those who are academically on track. To take full advantage of this assistance and opportunity all students will need to fill out a FERPA release form and sign a participation contract. In addition, both a survey and a Learning Assessment Study Strategies Inventory (LASSI) will have to be completed at the beginning and at the end of the course.

### **Course Objectives**

By the completion of the course, students will be able to:

1. Demonstrate mastery of the fundamental chemistry of biologically important molecules.
2. Relate cell structures to biological function and describe their role in metabolism.
3. Recognize the commonalities between organ systems of diverse animal species.
4. Work with peers to apply content knowledge in problem solving and effectively communicate solutions and reasoning to classmates and instructors.

### **Laboratory**

BIOL 1161 is a 1 credit-hour course consisting of lecture and laboratory. **Concurrent enrollment** and attendance in the laboratory course ***is not required for the lecture course.*** For those enrolled in this course, the required laboratory manual is "*Introduction to Biological Sciences BIOL 1161 Laboratory Manual*, 2nd edition (Bluedoor Publishing, 2012 ISBN 978-1-59984-433-6), which is available at the University Bookstore. For further information on BIOL 1161 laboratories contact the laboratory supervisor, Dr. Ana Medrano, using the email account: [introbio@uh.edu](mailto:introbio@uh.edu). Dr. Medrano's office is located in STL 108D.

### **Exams and Grading Policies**

There will be four exams; the final exam **is not** comprehensive and will include material from 4-5 chapters. Exams will cover material presented during lectures and homework assignments. They consist mainly of multiple choice questions which may also include diagrams/pictures, and some true/false questions. Each exam will cover 19% of the final grade, for a total of 76%. The *MasteringBiology* homework assignments make up another 19% and attendance for the remaining 5% of the final grade; totaling 100%.

**EXAMS:** Students must take all four exams; there **are no** dropped exams, **and there are no make-up exams**. The only exceptions to this policy will be in the case of a **verifiable** medical condition or other emergency; I must be notified of this as soon as possible, **prior to** the exam date. If you have a valid excuse for missing an exam, then at my discretion, I may allow a make-up exam to be given. **Excuses of a purely social nature will not be accepted.** Please familiarize yourself with the

University policies on cheating and academic honesty outlined in the University of Houston Student Handbook. ***Cheating during the exam will not be tolerated.*** Demonstrable incidents of cheating could result in the student receiving a zero for the exam or a grade of "F" for the course.

For each exam, all scores are subjected to a statistical analysis, which may or may not yield a curve; results of this analysis are presented the week after an exam and will be posted on Blackboard.

**HOMEWORK:** There will be three components (weekly homework problems, a 3 page mini paper and a teamwork flyer project) that make up the total homework grade.

The first component, weekly homework problems, will cover material presented in 1-3 chapters and will be completed on-line using the MasteringBiology interactive system. Students will have at least 7 days to complete weekly problems, which will include multiple choice questions, activity type questions and tutorials.

The second component, two page mini paper, will be assigned to each student. One quarter of the class will have the due date assigned by the date of the first exam. The second quarter of the class will have the due date assigned before exam two, third quarter before exam three and the final quarter assigned before exam 4. The spread allows the professor the ability to handle 500+ students (125 papers due per exam). Topics will be selected by students from a list of approved topics issued by professor.

The last component, teamwork flyer project, will be selected by students from a list of 20 topics that involve social responsibility (examples include: the advantage of the flu vaccine, protection from the nile virus, smoking on campus, germ awareness (should we use sanitizer), security on campus, the benefit and detriment of caffeine drinks, is the ozone layer still an issue, will required genetic testing at the time of insurance enrollment be advantageous to the community or industry, when should cloning be an option, etc.). Students will be asked to work in teams of 5-10 to create a flyer that educates the community about these different social issues. This team work project will allow students to address many of the social issues that influence the health and well-being of our communities. Students will also be asked to rate their own personal involvement, as well as the involvement of the other members of their team using an anonymous survey.

The final homework grade will be calculated and will make up 19% of the final grade.

*For those students that score below 70% on first exam, mandatory weekly recitation sessions will be provided to help students become more successful. Recitations attendance and participation will be factored into homework grade (see CSSP program grant and grade summary below).*

<b>Recitation Slots</b>	Monday	9:00–10:00am or 11:00am–12:00pm
	Tuesday	8:30-9:30am or 11:30am–12:30pm or 4:00-5:00pm
	Wednesday	10:00–11:00am or 7:00-8:00pm
	Thursday	11:30am–12:30pm or 4:00–5:00pm
	Friday	11:00am-12:00pm or 12:00–1:00pm

**DAILY CLICKER QUIZZES :** Extra credit is provided in the form of daily clicker questions/quizzes that are given during each class period. The daily clicker quizzes generally comprise 1-3 questions each day totaling about 5-15 per exam period. These daily quiz questions will appear sometime within the class period and may warrant discussion with classmates. In order to get extra credit points added to your exam, you must receive a score  $\geq 75\%$  on all quiz questions within an exam period. Unlike exams, quizzes are not curved. Each set of quizzes you get credit for will gain you 5 points added to the associated exam score. **There is no partial credit given AND there is absolutely, under any circumstances, no make-ups for daily quiz questions.**

**ATTENDANCE :** There will be a daily recording of the attendance in class. This attendance will count as the remaining 5% of your grade. There will also be a MANDATORY field trip. In order to

receive credit for attendance, you must be present at the mandatory field trip. There will be a number of field trip options to select from at different times in the week.

At the end of the semester, the four exams, homework (including recitation, if applicable), and attendance will be calculated based on percentage weight (see below).

<b>Grade Summary:</b>	Exam # 1	19% (includes daily quiz questions)
	Exam # 2	19% (includes daily quiz questions)
	Exam # 3	19% (includes daily quiz questions)
	Exam # 4	19% (includes daily quiz questions)
	Attendance	5%
	Homework	19% (if you receive less than 70 on first exam 19% will be split 50/50 between homework (9.5%) and recitation participation and attendance (9.5%))

From this final analysis, a letter grade will be determined (C-, C, C+, B-, B, etc) and assigned. A tentative range for final grades is shown below:

**Grade scale: A (93-100), A- (90-92), B+ (87-89), B (83-86), B- (80-82), C+ (77-79), C (73-76), C- (70-72), D+ (65-69), D (60-64), D- (55-59), F (54 and bellow).**

**NOTE: Every student has their own expectations in terms of the final grade they wish to achieve in the course. If you are not meeting these expectations as indicated by your first 2 exam scores, then drop the course. You can drop the course with a "W" up until November 2<sup>nd</sup>; after this date it will be too late.**

### **Tutoring**

Tutoring is available through Learning Support Services (713-743-5411); located in Cougar Village, room N109 (website for schedule of tutoring hours: <http://www.las.uh.edu/lss/tutoring.aspx>).

### **5 Tips for Success**

- 1. Show up to class**, actively listen and make an effort to remain engaged in presentation. Hints are given through the lecture and they give some insight on what may appear on the exam. In addition daily questions will be presented as well as attendance will be taken through daily quiz questions.
- 2. Lecture notes and other class material are posted on Blackboard prior to class. Download documents and bring with you to take notes on during class.** It is important to take notes during class; not all material is presented in my lecture notes, as I frequently draw diagrams and write during lecture in order to explain concepts and processes. The assigned chapter(s) should be read **prior to** the class lecture covering that material. This strategy will help you to follow the lectures and enhance your ability to master the information and concepts needed to do well on the exams.
- 3. Keep up with the reading and studying!** If you fall too far behind it may be impossible to catch up since the fundamentals taught early on are integral to the material taught later on in the course. A consistent effort is essential to getting a good grade. When determining how much study time is needed to be prepared, a good rule of thumb is 3 hours for each lecture hour.
- 4. Studying for exams:** lecture notes and your own notes taken during class should be your primary study material; use the text as a resource to help you understand material you don't understand from the lecture notes. As you study, make a note of those topics you do not quite understand and see me (or email) for clarification of these concepts. Your goal in studying is not to memorize everything, but

rather to be able to correctly explain the concepts covered in class. If you truly understand a particular concept in this way, then you can correctly answer **any** type of question asked on that topic.

5. The text for this course is supported by a free web site ([www.masteringbiology.com](http://www.masteringbiology.com)) and CD-ROM that provide a variety of learning tools including *animated tutorials, self-quizzes, glossary of key terms and concepts, etc.* (the website and CD-ROM have the same information). Even beyond homework assignments, these are valuable resources that can help you to master the concepts and reinforce your learning.

### **General Information**

**Students with disabilities** are accommodated per University rules and regulations. To make the necessary arrangements you should register with Center for Students with Disabilities at 307 Student Service Center, or call (713)743-5400. If a student decides to **withdraw** from the course, it is his/hers responsibility (*not* the instructors) to complete, have the instructor sign, and submit the necessary form. Students who complete only part of the exams and/or other required assignments for the course and do not complete the paperwork required for withdrawal will receive a grade of "F". At the instructor's discretion, students withdrawing from the course may receive a grade of "F" instead of a "W" if they have not received passing grades up to that point. **Regarding late drops (after the drop date has passed): I have no authority to drop you from the course under these circumstances.**

#### **Important Dates:**

Tues	Sept 4 <sup>th</sup>	Last day to add class online
Wed	Sept 12 <sup>th</sup>	Last day to drop the course without receiving a grade (**)
Fri	Nov 2 <sup>nd</sup>	Last day to withdraw from the course with a "W" (***)

### **Fall 2012 – Student Clicker Guide**

#### **Where to Buy TurningPoint Clicker**

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TurningPoint RF-LCD clickers are available at Barnes & Noble at University Center (UC).

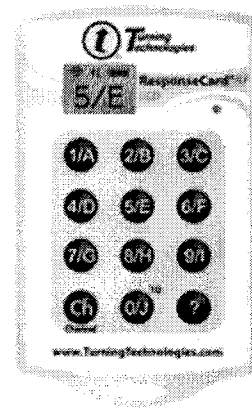
#### Clicker Pricing Information:

- \$40 (including tax and built-in lifetime activation)

For the detailed Clicker purchasing information, please contact Barnes & Noble in the UC.

- Address: 4800 Calhoun Rd., 126 University Center  
Houston, TX 77204
- Phone: 713-748-0923

**NOTE:** If you are getting a book loan, you can use your book loan to buy a clicker through the bookstore.



#### **IMPORTANT:**

There are currently two different clicker models used on campus – RF and RF-LCD. Both clickers work exactly the same; the only difference is that RF-LCD clicker has the LCD panel that displays your

answer choices. Beginning Summer 2010, the campus has been transitioning the clicker from the RF to the RF-LCD model. If you purchased an RF clicker in Fall 2009, Spring 2010 or Summer 2010, you can still use your RF clicker in any future classes that require clickers.

**Clicker Problem Report:**


Your clicker comes with a one-year warranty starting from the day you purchase your clicker. If your clicker stops working during the warranty period, contact by email: [fdis@uh.edu](mailto:fdis@uh.edu)

**How to register Clicker via Blackboard**

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Please follow the steps below to register your clicker:

- 1) Log on to Blackboard at [www.uh.edu/blabckboard](http://www.uh.edu/blabckboard).
- 2) Select the course you will be using the TurningPoint clicker for.
- 3) On the homepage, click on the "**BIOL 1361 – 14386 Pad Registration**" icon.
- 4) Enter your clicker ID. The ID is available on the back of your clicker – it is a 6-digit combination of numbers or/and letters.

	<p>Response Device ID: <input style="width: 100%;" type="text" value=""/></p> <p>Confirm Response Device ID: <input style="width: 100%;" type="text" value=""/></p> <p style="text-align: right;"><b>NOTE:</b> The ID is not case-sensitive.</p>
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**NOTE:**

If you already registered your clicker for a course in the previous or current semester, you may see the following statement when you try to register your clicker for another course.

Your currently registered Response Device ID is:

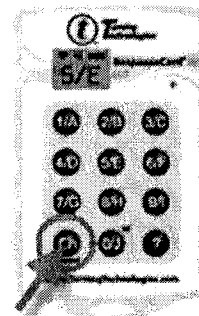
Even though it shows that your clicker is already registered, provide your clicker ID again.

- 5) Click Submit.

**How to Use Clicker in Class**

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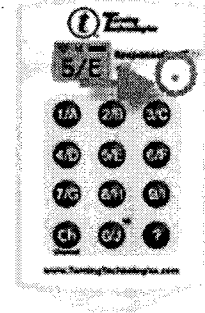
- 1) If you have a brand-new clicker, remove the plastic flap from the back of your clicker before using it.
- 2) Make sure to set your clicker with a correct channel based on the channel number your instructor uses. At the beginning of each class, your instructor will display a channel number for the class.



To set the channel, press Go (CH) → channel number → Go (CH).

For example, if *Professor A* uses a channel number **60**, press Go (CH) and **60**. Then, press Go (CH) again. Once the process is done successfully, you should see the green light on your clicker.

- 3) Whenever you submit an answer, pay attention to the light indicator. When the light shows solid green, it means that your answer has been submitted.



## Fall 2011 – MasteringBiology Guide

In this course you will be using MasteringBiology®, an online tutorial and homework program that accompanies your textbook.

### What You Need:

- ✓ **A valid email address**
- ✓ **A student access code**  
(Comes in the Student Access Code Card/Kit that may have been packaged with your new textbook or that may be available separately in your school's bookstore. Otherwise, you can purchase access online at [www.masteringbiology.com](http://www.masteringbiology.com).)
- ✓ **The ZIP or other postal code for your school:** \_\_\_\_\_
- ✓ **A Course ID: MBogletree78985** (Provided by your instructor)

### 1. Register

- Go to [www.masteringbiology.com](http://www.masteringbiology.com) and click **Students** under **Register**.
- To register using the student access code inside the MasteringBiology Student Access Code Card/Kit, select **Yes, I have an access code**. Click **Continue**.

–OR– *Purchase access online:* Select **No, I need to purchase access online now**. Select your textbook, whether you want access to the eText, and click **Continue**. Follow the on-screen instructions to purchase access using a credit card. The purchase path includes registration, but the process is a bit different from the steps printed here.

- **License Agreement and Privacy Policy:** Click **I Accept** to indicate that you have read and agree to the license agreement and privacy policy.
- Select the appropriate option under "Do you have a Pearson Education account?" Continue to give the requested information until you complete the process. The **Confirmation & Summary** page confirms your registration. This information will also be emailed to you for your records.
- **Did you receive multiple access codes for MasteringBiology and/or Virtual Biology Labs?** Sometimes new books come with more than one student access code card. If you have more than one code, register using all of your codes BEFORE clicking Log In Now. For each additional code that you have, return to <http://www.masteringbiology.com/> and click the **Students** button under Register again. *Important:* Identify the SAME student account each time you register. To do this, answer **Yes** to "Do you have a Pearson account?" Then enter your existing login name and password.

### 2. Log In

- Go to [www.masteringbiology.com](http://www.masteringbiology.com).
- Enter your Login Name and Password that you specified during registration and click **Log In**.

### 3. Join Your Instructor's Course and/or Open Self-Study Resources

Upon first login, you'll be asked to do one or more of the following:

- **Join a Course** by entering the **MasteringBiology Course ID** provided by your instructor. If you don't have a Course ID now, you can return to join the MasteringBiology course later. When you join a course, you may also be asked for a Student ID (follow on-screen instructions).
- **Explore the Study Area** or **Launch Your eText**, if these resources are available for your textbook.

#### To Access MasteringBiology Again Later

Simply go to [www.masteringbiology.com](http://www.masteringbiology.com), enter your Login Name and Password, and click **Log In**.

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## APPENDIX – SAMPLE EXAM QUESTIONS for BIOL 1361

### Learning Outcomes

By the completion of the course, students will be able to: 1. Demonstrate mastery of the fundamental chemistry of biologically important molecules. 2. Relate cell structures to biological function and describe their role in metabolism. 3. Recognize the commonalities between organ systems of diverse animal species. 4. Work with peers to apply content knowledge in problem solving and effectively communicate solutions and reasoning to classmates and instructors.

### Critical Thinking Exam Questions

**1. The function of each protein is a consequence of its specific shape. Excessive heat may disrupt weaker bonds that maintain protein shape. If temperature is normalized the protein may resume its original shape and function. What is the term used to describe this phenomenon?**

- A) hydrolysis
- B) stabilization
- C) destabilization
- D) renaturation
- E) denaturation

**2. The secretion of hormone A causes a change in the amount of protein X in an organism. If this mechanism works by positive feedback, which of the following statements represents that fact?**

- A) An increase in A produces an increase in X.
- B) An increase in X produces a decrease in A.
- C) A decrease in A produces an increase in X.
- D) A and B are correct.
- E) B and C are correct

**3. Blood samples taken from an individual who had been fasting for 24 hours would have which of the following?**

- A) high levels of insulin
- B) high levels of glucagon
- C) low levels of insulin
- D) low levels of glucagon
- E) both B and C

**4. A marine sea star was mistakenly placed in freshwater and it died. What is the most likely explanation for its death?**

- A) The sea star was stressed and needed more time to acclimate to new conditions.
- B) The sea star is hyperosmotic to the freshwater, and it could not osmoregulate.
- C) The osmoregulatory system of the sea star could not handle the change in ionic content presented by the freshwater.
- D) The contractile vacuoles used to regulate water content ruptured in the freshwater.
- E) The cells of the sea star dehydrated and lost the ability to metabolize.

**5. A patient has had a serious accident and lost a lot of blood. In an attempt to replenish body fluids, distilled water, equal to the volume of blood lost, is transferred directly into one of his veins. What will be the most probable result of this transfusion?**

- A) It will have no unfavorable effect as long as the water is free of viruses and bacteria.



- B) The patient's red blood cells will shrivel up because the blood fluid is hypotonic compared to the cells.
- C) The patient's red blood cells will swell because the blood fluid is hypotonic compared to the cells.
- D) The patient's red blood cells will shrivel up because the blood fluid is hypertonic compared to the cells.
- E) The patient's red blood cells will burst because the blood fluid is hypertonic compared to the cells.

6. When an organism dies, its muscles remain in a contracted state termed "rigor mortis" for a brief period of time. Which of the following most directly contributes to this phenomenon? There is no

- A) ATP to move cross-bridges.
- B) ATP to break bonds between the thick and thin filaments.
- C) calcium to bind to troponin.
- D) oxygen supplied to muscle.
- E) glycogen remaining in the muscles.

### Exam Questions Testing Empirical and Quantitative Skills

1. The molecular formula for glucose is  $C_6H_{12}O_6$ . What would be the molecular formula for a molecule made by linking three glucose molecules together by dehydration reactions?

- A)  $C_{18}H_{36}O_{18}$
- B)  $C_{18}H_{32}O_{16}$
- C)  $C_6H_{10}O_5$
- D)  $C_{18}H_{10}O_{15}$
- E)  $C_3H_6O_3$

2. A patient has a blood pressure of 120/75, a pulse rate of 40 beats/min, a stroke volume of 70 mL/beat, and a respiratory rate of 25 breaths/min. This person's cardiac output per minute will be

- A) 500 mL.
- B) 1,000 mL.
- C) 1,750 mL.
- D) 2,800 mL.
- E) 4,800 mL.

3. Approximately how many molecules of ATP are produced from the complete oxidation of two molecules of glucose ( $C_6H_{12}O_6$ ) in cellular respiration?

- A) 2
- B) 4
- C) 15
- D) 38
- E) 76

4. Atmospheric pressure at sea level is equal to a column of 760 mm Hg. Oxygen makes up 21% of the atmosphere by volume. What is the partial pressure of oxygen ( $P_{O_2}$ )?

- A) 160 mm Hg
- B) 16 mm Hg
- C) 120/75
- D) 21/760
- E) 760/21