BIOLOGY II

LECTURE SECTION
BIOL-1407.001
MTWR, 2:00 - 3:55 PM
Engineering Building (EN) - 107

LABORATORY SECTIONS
BIOL-1407.102 MWR, 12:00 - 1:55 PM
BIOL-1407.103 MWR, 4:00 - 5:55 PM
Center for Instruction (CI) - 208

INSTRUCTOR: KATHY DICKINSON (M.S.)
E-mail: Kathy.Dickinson@tamucc.edu
Office Hours: Monday – Thursday
1:30 PM - 2:00 PM and 4:00 PM - 4:30 PM

LABORATORY COORDINATOR: PHIL JOSE (M.S.)
Office: Center for the Sciences (CS) 243
Office Phone: (361) 825-5757
E-mail: Philip.Jose@tamucc.edu

TEACHING ASSISTANTS: 102 W. ROBERSON 103 C. CROSS


REQUIRED LAB MANUAL: Laboratory Manual for Biology 1407, Summer 2014. Available at the University Bookstore.

REQUIRED ITEMS: All students are required to have a laboratory coat when entering the laboratories for any reason. In addition, students must be wearing long pants and closed-toe, closed-heel shoes to enter the laboratories at any time.

PREREQUISITES: General Biology I (BIOL 1406).

COREQUISITES: Each student must complete laboratory safety instruction to remain in the laboratory, and must attend the laboratory section for which he or she registered.

COURSE DESCRIPTION: Biology II (BIOL 1407) is an overview of the major concepts in evolution, the biological diversity of plants and animals, and ecology. Laboratory work will include individual/team activities as well as technology-related assignments. This course counts toward the natural science component of the University Core Curriculum.
COURSE OBJECTIVES:
The Texas Higher Education Coordinating Board lists the following course objectives for courses, such as BIOL 1407, that fulfill the core curriculum requirements:

1. **Critical thinking.** In BIOL 1407, students gather and assess information relevant to a question. In lecture and laboratory, students will gather data about a situation, graph the data, interpret the data and explain to others what the data tell us about the situation.

2. **Communication skills.** In BIOL 1407, students develop, interpret, and express ideas through oral and written communication in lecture and laboratory.

3. **Empirical and quantitative reasoning.** In BIOL 1407 lecture and laboratory, students manipulate and analyze numerical data and arrive at an informed conclusion. This objective is linked to the communication skills objective because students report their conclusions in laboratory reports and presentations, and in classroom assignment/examinations.

4. **Teamwork.** In BIOL 1407, students integrate different viewpoints as a member of a team during group work in laboratory. Science is a group endeavor and interdisciplinary groups are increasingly important in many fields within biology.

SPECIFIC STUDENT LEARNING OUTCOMES:
- The student will be introduced to universal biological concepts such as:
  - Methods of scientific inquiry
  - Homeostasis as the basis for growth and metabolism
  - Evidence of biological change over time
  - Structure and function of microorganisms
  - Structure and function of plants and animals
- The student will investigate the multiple effects of humans on other species and the environment such as:
  - Population growth
  - Environmental pollution
  - Urban growth and industrialization
  - Infection and disease
  - Farming and animal breeding
- The student will begin acquiring professional scientific skills such as:
  - Inquiry-based laboratory techniques
  - Technical writing ability
  - Scientific presentation skills
- The student will gain skills in the use of technological advances in computing such as the use of:
  - Excel tables and figures
  - Worldwide web as an information retrieval source
- The student will enhance critical thinking skills by:
  - Exploring the scientific method and its ramifications
  - Analyzing results obtained in laboratory experiments
  - Evaluating scientific literature
- The student will enhance mathematical competency skills by:
  - Learning to convert data into tables, charts, and graphs
Beginning to evaluate data statistically

- The student will enhance reading/writing skills by:
  - Synthesizing lecture information with the reading assignments
  - Extracting information from the world wide web
- The student will enhance listening/speaking skills by:
  - Improving note taking ability
  - Extracting information presented during in-class videos

Time constraints and the introductory nature of the course result in some topics being presented as an overview of highlights, while in others only a few selected examples are covered in greater detail. The goal of this course is to provide the students with an opportunity to learn. Students shall attend and participate in lectures and laboratories, read the assigned material, and mentally organize information from their instructors, their readings and their laboratory work. During class, students should feel free to ask the instructor questions about the material being covered in class.

**Tentative Lecture Schedule:**

<table>
<thead>
<tr>
<th>DAY</th>
<th>DATE</th>
<th>TOPIC</th>
<th>CHAPTERS*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon.,</td>
<td>7 July</td>
<td>Introduction, Review of Scientific Methodology, Evolution</td>
<td>19</td>
</tr>
<tr>
<td>Tues.</td>
<td>8 July</td>
<td>Evolution of Populations</td>
<td>21</td>
</tr>
<tr>
<td>Wed.</td>
<td>9 July</td>
<td>Speciation</td>
<td>22</td>
</tr>
<tr>
<td>Thurs.</td>
<td>10 July</td>
<td>History of Life on Earth</td>
<td>23</td>
</tr>
</tbody>
</table>

End of Material for Lecture Examination I

<table>
<thead>
<tr>
<th>Mon.,</th>
<th>14 July</th>
<th>LECTURE EXAMINATION I, Phenylogeny and Classification</th>
<th>(19 – 23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tues.</td>
<td>15 July</td>
<td>Phenylogeny and Classification (cont’d)</td>
<td>20</td>
</tr>
<tr>
<td>Wed.</td>
<td>16 July</td>
<td>Bacteria &amp; Archaea</td>
<td>24</td>
</tr>
<tr>
<td>Thurs.</td>
<td>17 July</td>
<td>Protists</td>
<td>25</td>
</tr>
<tr>
<td>Mon.</td>
<td>21 July</td>
<td>Plants</td>
<td>26</td>
</tr>
<tr>
<td>Tues.</td>
<td>22 July</td>
<td>Fungi</td>
<td>26</td>
</tr>
<tr>
<td>Wed.</td>
<td>23 July</td>
<td>Animals</td>
<td>27</td>
</tr>
</tbody>
</table>

End of Material for Lecture Examination II

<table>
<thead>
<tr>
<th>Thurs.</th>
<th>24 July</th>
<th>Plant Structure &amp; Growth</th>
<th>28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon.,</td>
<td>28 July</td>
<td>LECTURE EXAMINATION II, Plant Responses to Signals</td>
<td>(20 – 27)</td>
</tr>
<tr>
<td>Tues.</td>
<td>29 July</td>
<td>Plant Responses to Signals (cont’d)</td>
<td>31</td>
</tr>
<tr>
<td>Wed.</td>
<td>30 July</td>
<td>Motor Mechanisms &amp; Behavior, Immune System</td>
<td>39, 35</td>
</tr>
<tr>
<td>Thurs.</td>
<td>31 July</td>
<td>Biosphere &amp; Population Ecology</td>
<td>40</td>
</tr>
<tr>
<td>Mon.</td>
<td>4 Aug.</td>
<td>Community &amp; Species Interactions</td>
<td>41</td>
</tr>
<tr>
<td>Tues.</td>
<td>5 Aug.</td>
<td>Conservation Biology &amp; Global Ecology</td>
<td>43</td>
</tr>
</tbody>
</table>

End of Material for Lecture Examination III


End of Material for Final Examination

Thurs., 7 Aug.  FINAL EXAMINATION (2:00-3:55 PM)

*Chapters in Urry et al. (2014); reading these chapters is a standing class assignment.

**Major Course Requirements / Grading:**

Your final letter grade will be based on the points you earn in lecture and laboratory.

A ≥ 90%  B ≥ 80%  C ≥ 70%  D ≥ 60%  F ≥ 0%
This course is designed so that lecture contributes 3/4 of your grade, and laboratory contributes 1/4 of your grade:

<table>
<thead>
<tr>
<th>Lecture Points:</th>
<th>75 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Points:</td>
<td>25 %</td>
</tr>
<tr>
<td><strong>TOTAL PERCENTAGE POSSIBLE:</strong></td>
<td>100 %</td>
</tr>
</tbody>
</table>

If you make 90 % of total points available for the lecture and 80 % of total points available for the laboratory portion, then your grade would be calculated as:

\[(90 \times 0.75) + (80 \times 0.25) = (67.5) + (20) = 87.5/100 \text{ possible} = B\]

**Lecture Points:** You can earn 500 points in lecture, distributed as follows:

<table>
<thead>
<tr>
<th>Three Lecture Exams (100 points each):</th>
<th>300 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive Final Lecture Exam:</td>
<td>100 points</td>
</tr>
<tr>
<td>Five Quizzes (10 points each):</td>
<td>50 points</td>
</tr>
<tr>
<td>Mastering Biology</td>
<td>50 points</td>
</tr>
<tr>
<td><strong>TOTAL POINTS POSSIBLE:</strong></td>
<td>500 points</td>
</tr>
</tbody>
</table>

**Exams:** In lecture, I will give four exams (100 points each), taking questions for these tests from material covered in the lectures, from handouts and other assignments, and from readings in Urry et al. (2014). Examinations may consist of essay, short-answer, compare-contrast, fill-in-the-blank, multiple-choice, matching, making and/or labeling drawings, and/or various types of “flex” questions (i.e., anything is fair game). The first three examinations are sequential (i.e., each examination covers material from specific sections of the course). The final examination is comprehensive (i.e., covers material from the entire course).

The final lecture examination is redemptive. In other words, it can be doubled to replace your lowest examination grade (if this increases your total lecture points). Thus, the 400 examination points can be earned as

1) the sum of all four examinations (including the final)  
   or  
2) the sum of the two highest non-final examinations plus double (2x) the final examination

whichever method gives you the highest number of points. Because of this flexibility, however, no make-up examinations are available.

**Quizzes:** In lecture, I will give five quizzes (10 points each) on random days, taking questions from readings in Urry et al. (2014). Quizzes may consist of essay, short-answer, compare-contrast, fill-in-the-blank, multiple-choice, matching, making and/or labeling drawings, and/or various types of “flex” questions (i.e., anything is fair game). Reading the appropriate chapter in the textbook ahead of class time is a
standing class assignment and quizzes will be given at the beginning of class to reflect this requirement. Quizzes will be unannounced and cannot be made up—period. So be in class and be on time. No individual extra credit assignments will be available in this class, so don’t ask! There are ample opportunities for improving your grade through the course if you start from the very first day with a good attitude.

**Laboratory Points:** Laboratory grading, policies, and rules will be discussed thoroughly in laboratory. In general, you will earn points in laboratory from reports, quizzes, worldwide web, video and in-class assignments, practical examinations (timed laboratory examinations with short answer questions), papers and/or presentations based on laboratory research, etc. Laboratory reports may include drawings, graphs, tables, and written evaluations of the laboratory exercises. At the discretion of your laboratory instructor, only one laboratory report may be required for work done in pairs or in small groups. Only those individuals actually present and participating in the laboratory will receive credit for the report. Reports have specified due dates as listed in the laboratory schedule. If you have questions, ask your laboratory instructor.

**Requirements for Laboratory:**
Students **must** complete a laboratory safety instruction during laboratory. Students who miss the first laboratory (excused absences only) will be allowed to take the instruction during TA office hours or on-line (see the TA for information). Students who do not complete this instruction will **not** be allowed to remain in the laboratory, and will irrecoverably lose all points associated with the laboratory until they complete the safety instruction. Students should buy (and wear) a laboratory coat. Students must also wear long pants (i.e., leg coverings must reach the ankle; **no** shorts, cut-offs, or short skirts) and closed-top, closed-heel shoes (e.g., **no** sandals). Gloves, eye protection, and dissecting supplies will be provided when needed. Students must always wear appropriate attire and bring laboratory coats with them to laboratory. A student without a laboratory coat and appropriate attire will **not** be allowed to enter the laboratory. (Time lost while a student goes home to get a laboratory coat or appropriate attire is **always** unexcused, and any points lost during that time **cannot** be recovered.) Students should bring the textbook, the laboratory manual and any relevant handouts to each laboratory period. **No** food, drink, or cosmetics are allowed in the laboratory.

**Academic Advising:**
As soon as students are ready to declare a major, they should meet with an Academic Advisor. The Academic Advisor will guide the student through the requirements of the major, including developing and maintaining the student’s degree plan and directing the student to an appropriate Faculty Mentor. Academic Advisors for the College of Science & Engineering are located in the Center for Instruction (CI), Suite 350, (361) 825-6094.

**Tutoring and Other Services:**
To be successful in this course, and most others, you must cultivate good note-taking skills, organization skills, study habits, and test-taking strategies from the very beginning. Your lecture and laboratory instructors are always available for help, but don’t wait until it is too late! The Center for Academic Student Achievement (CASA) (825-5933), and STEM Outreach Access and Retention (SOAR) (825-2618) provide free tutoring, test-
taking strategies, and extra help. Take advantage of these services! Should you have test
anxiety, stress problems, or need help with study skills, the University Counseling Center
(University Center, 825-2703) also provides a free service.

**DISABILITY AND VETERANS’ SERVICES:**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that
provides comprehensive civil rights protection for persons with disabilities. Among other
things, this legislation requires that all students with disabilities be guaranteed a learning
environment that provides for reasonable accommodation of their disabilities. If you
believe you have a disability requiring an accommodation, please call or visit Disability
Services at (361) 825-5816 in Corpus Christi Hall 116.

If you are a returning veteran and are experiencing cognitive and/or physical access
issues in the classroom or on campus, please contact the Disability Services office for
assistance at (361) 825816.

**GRADE APPEALS:**
As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a
student who believes that he or she has not been held to appropriate academic standards
as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading,
may appeal the final grade given in the course. The burden of proof is upon the student to
demonstrate the appropriateness of the appeal. A student with a complaint about a grade
is encouraged to first discuss the matter with the instructor. For complete details,
including the responsibilities of the parties involved in the process and the number of
days allowed for completing the steps in the process, see University Procedure
13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible
through the University Rules website at (http://www.tamucc.edu/provost/university_rules/index.html) and the College of Science
and Engineering Grade Appeals webpage (http://sci.tamucc.edu/students/
GradeAppeal.html). For assistance and/or guidance in the grade appeal process, students
may contact the chair or director of the appropriate department or school, the Office of
the College of Science and Engineering Dean, or the Office of the Provost.

**DROPPING THE COURSE (OR NOT):**
Always consult your instructor before dropping a class! If you drop the class before the
final “drop date,” you will receive a grade of “W” for that class. (Withdrawing from the
University means receiving a grade of “W” for all classes for the semester. Last day to
drop the class is Friday, July 25, 2014. Last day to withdraw from the University, is on
Tuesday, August 05, 2014. There are consequences for dropping a class, so read the drop
policy in the University Catalog, see your academic advisor, (and someone in the
financial aid office) before you drop any class. **IMPORTANT:** Simply stopping
attendance and participation in a class **WILL NOT** automatically result in a student
being dropped from the class; the student **must** initiate the “drop” process by going to the
Student Services Center and filling out a course drop form.

**ATTENDANCE POLICIES:**
My attendance policy is the same as that stated in the University Catalog. Attendance is
the student’s responsibility and will help you do well in this course.
Absences: You are responsible for the material covered and assignments made in every lecture regardless! It is always your responsibility to determine what happened in class during your absence. If you are absent, tardy, or leave early, I will provide you with copies of assignments and handouts if—and only if—you ask for them. (In other words, I will not, “track down” absentees to make sure that they know about assignments.) You must obtain class notes from other students. Because developing note-taking skills is a necessary skill, I do not “share” or “post” my notes or PowerPoints.

There Are NO Individual Make-up Examinations: The grading formulas above give you two chances to earn points from lecture exams: methods 1 or 2 if you take all exams, and method 2 if you miss one lecture exam. If you miss more than one exam, you will receive a zero for the additional missed exam(s).

There Are NO Individual Make-up Quizzes: Read the appropriate chapter in the textbook ahead of class time, be in class, and be on time.

Miscellaneous Policies Regarding Attendance:

Unacceptable Excuses: Once enrolled in a class, it is the student’s responsibility to arrange his or her schedule (work and personal) so that no regularly scheduled class or examination time is missed. Only unavoidable absences are excused, so routine personal events (e.g., vacations, weddings, birthday celebrations, reunions, non-emergency medical or dental visits, parent-teacher conferences, household or auto repairs) must be scheduled to avoid conflicts with classes. Oversleeping is never an acceptable excuse. Employment conflicts and school or work interviews must be arranged to avoid conflicts with your classes and are not acceptable excuses for absences, tardiness, or leaving class early. Texas waives jury duty for students, so jury duty is not an acceptable excuse.

“Pre-Tests”: For rare scheduled events (athletics, military duty, etc.), you may arrange with the Instructor to take a lecture examination before (but not after) its scheduled date. (You must take a test as close to its originally scheduled time as possible, but you may not take a test more than one week before its originally scheduled time. You must obtain your Instructor’s approval at least one week before you wish to take the pre-test.) If you arrange to take any test at an alternate time and do not attend that appointment, you then forfeit the opportunity to take the test except at its originally scheduled time. Students who do not arrange with the Instructor to take examinations in advance will not be eligible for this special consideration. A written excuse is mandatory and it is the student’s responsibility to be certain that written excuse is given to the Instructor from the university department involved or from the Office of Student Engagement and Success for this special consideration.

The Instructor—in consultation with Dr. Don Albrecht, Vice President for Student Engagement and Success—will determine if circumstances warrant giving an individual a make-up test after the original test. A make-up test given after the original test will be all written (i.e., no multiple choice or matching).
Late Assignments: You may always turn in assignments early. Except for excused absences, late assignments will not be accepted. If you know in advance that you will have an excused absence when an assignment is due, you must turn in that assignment before its due date.

Any situations for which you cannot provide an acceptable excuse as outlined above (e.g., “I have an excuse, but it is too personal to discuss with you”) will be referred to Dr. Don Albrecht, Vice President for Student Engagement and Success.

Expectations:
You are adult university students. I will treat you as such, and I will expect you to act as such.

You will act with courtesy and common sense. I will not tolerate disruptive, disrespectful, or abusive behavior/language (including comments made on class assignments) directed toward anyone in this class (i.e., student or instructor). Violations range from talking during class to outright insubordination, and will result in penalties that range from the student being asked to stop to the student being “escorted” from the class—permanently. Cellular phones, pagers, and other “beepers” must be silenced BEFORE you enter the classroom. You may use calculators during all exams. However, use of cell phone calculators is NOT permitted. The use of i-pods or other electronic devices is NOT permitted. Children are not allowed in the rooms during lecture periods, or when the child’s guardian is working or studying “after hours.”

You will act like a responsible adult. You are responsible for your own education. Do not expect the instructor to take you by the hand, show you everything you need to know, and then have you regurgitate this information on an examination. This is not an effective way for self-motivated adults to learn. Students are responsible for all class and lecture notes; required assignments, and any additional handouts or assignments given by an instructor. This includes (but is not limited to)

- Knowing and meeting university-imposed deadlines (e.g., withdrawal dates of various types). This information is found in the online University Catalog, Course Schedule or elsewhere on the University website.
- Knowing and meeting assignment dates and times—including any changes that may occur during the semester.
- Checking your answers against a key as soon as possible. A test score is not the end of the learning process. Always review your tests to determine why you missed questions. Making—and correcting—mistakes is an effective, natural way to learn material. Educators have a fancy term, reflective learning, for this simple process.
- Keeping track of your progress (i.e., your grades, points you earn, and averages).
- Asking for help. Instructors are available for consultation and extra help, but it is the student’s responsibility to request help.

Learning is more than just reading, taking notes, and memorizing. Reading and taking notes puts information in short-term memory where it is forgotten quickly unless you do something with it. Memorizing, though important, is but the first step
in the learning process. As university students, you must learn to link, combine, and synthesize the bits of data that you memorize into useful concepts.

**Scholastic dishonesty will not be tolerated.** It will be prosecuted to the full extent of university regulations. All students are expected to be familiar with the Academic Honesty Statement found in the current University Catalog. In addition, the following procedures will be enforced:

- You must be prepared to present a photo ID at all examinations.
- Always follow instructions on the test or answer sheet, or given orally by the instructor.
- If you leave an examination room—for any reason—you must hand in your answer sheet and you will **not** be able to resume the examination. Attend to personal matters (e.g., rest room visits) before the examination.
- Be on time! *Anyone arriving after the first test-taker has completed an examination and left the room will not be allowed to take that examination.*
- Cheating and plagiarism are unacceptable behaviors.
  1. Students are not to give or receive help during testing
  2. Students are not to submit any work that is not their own product

**IMPORTANT MISCELLANEOUS NOTES:**

- Follow instructions! The most common mistakes that cost students points result from failure to follow instructions.
- Bring two #2 pencils to each lecture examination (including the final examination); I neither provide nor sell pencils. (I will provide Scantron sheets for you.)
- Come to class prepared to take notes.
- I will **not** change a legitimate course grade just because you “need” it (for financial aid, to get into professional school, etc.). The grading section of this syllabus describes how I assign grades. Please be sure you earn enough points to get the grade you want. Take advantage of the resources I offer. The reasons for receiving a grade of “I” (incomplete) are clearly defined in the University Catalog; this “grade” **cannot** be used simply to prevent a student from receiving an unwanted grade in a class.
- I only discuss grades in person (i.e., I **do not** discuss grades or matters relating to grades over the telephone or by e-mail).

**COMPUTER ACCESS:** Use of a computer is important to this course (and many others). Students will need a computer to access e-mail, listservs, the worldwide web, the Bell Library catalogs and databases, and to prepare written assignments and slide/poster presentations. Computers are available for student use in Computer Laboratories around campus—the main one being Corpus Christi Hall-Room 200. Computer Laboratories are staffed with helpful personnel, and have generous operating hours. The University sets up a computer account for each student, and it is available from the first day of classes. Call the Student Computer Helpline at (361) 825-5618 for more information.

**Be organized** – Keep your work where you can get to it quickly (not mixed in with all your other classes) and in an understandable, chronological order.

**Be prepared** – Read ahead and study a little every day; more at exam time.
Be diligent – Do the assignment right away; not 20 minutes before it’s due!

Be smart – Use resources wisely; study groups, library, tutoring, worldwide web.

Be there – Absences will doom you in this class!

Be consistent – Start with hard work and a good attitude. There are ample opportunities for improving your grade through the course. End-of-the-semester miracles are rare.

GENERAL DISCLAIMER:
The Instructor reserves the right to modify the information, schedules, assignments, deadlines, and policies in this syllabus if and when necessary. Whenever possible, such changes will be announced in a timely manner during regularly scheduled lecture or laboratory periods. NO attempt will be made to contact students who were absent when an announcement was made. ALL students are responsible for abiding by all announced changes and it is the student’s responsibility to obtain this information. In rare cases, some modifications may be implemented without prior warning.

INSTRUCTOR’S NOTE:
In choosing to take this course, you agree to abide by the course rules, regulations, and standards. Should you have concerns or questions, you should discuss them with the instructor as soon as possible. However, you are bound by these rules, regulations, and standards from the first day of class throughout the duration of the course. Failure by you to comply with course rules, showing of disrespect toward me, or other classmates, will result in removal from the course. Photography, video, and/or audio recordings are NOT permitted during teaching presentations in lecture.