Biology 1308 Science for Life  
Department of Life Sciences  
Summer Session I 2015

A. COURSE INFORMATION
Course number/section: BIOL 1308_001 (Lec)  BIOL1308_101 (Lab)  
Class meeting time: Mon-Thur 1:00pm-3:50pm  
Class location: EN201  
Course Website: Blackboard

B. INSTRUCTOR INFORMATION
Instructor: Terri Nicolau  
Office: EN 310 B  
Phone: 361-825-2166  
Office Hrs: 12pm-1pm M-T  
Email: terri.nicolau@tamucc.edu

C. COURSE DESCRIPTION
Catalog Course Description  
This is a non-majors course in which students will learn basic biological principles, identify the relevance of science in everyday life, and will understand the scientific method. Hands-on lab activities will reinforce course concepts. This course does not substitute for biology (BIOL) 1406/1407 for science majors.

D. PREREQUISITES AND COREQUISITES
Co-requisites  
You must be registered for BOTH COMPONENTS of this course: BIOL 1308_001 & BIOL1308_101

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES
Required Textbook(s)  

INTERNET AND WEBSITE REQUIREMENTS:  
This course requires the use of the internet (email, listserv, and worldwide web) to foster the technological abilities of the student. All students are expected to subscribe to and utilize the course Blackboard account regularly.

Supplies  
Note taking supplies are required for class.
F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

Course Objectives: The primary objective of this course is to acquaint non-science majors with the process of science and major concepts in biology needed to make informed decisions in their life as responsible citizens. Major concepts include:

- **Cells and Chemistry:**
  - Are we alone in the universe? – Water, biochemistry, and cells.
  - Is it possible to supplement your way to better health? – Nutrients & Fat: How much is right for you? – Enzymes, metabolism, cellular respiration.
  - Life in the greenhouse.-photosynthesis and global warming

- **Genetics**
  - Cancer – DNA synthesis, mitosis and meiosis.
  - Are you only as smart as your genes? – Mendelian genetics.
  - DNA Detective – Complex patterns of inheritance and DNA fingerprinting.
  - Genetically modified organisms – Gene expression, mutation and cloning.

- **Evolution**
  - Where did we come from? – The evidence for evolution.
  - An evolving enemy – natural selection
  - Who am I? – species and races
  - Prospecting for biological gold – biodiversity and classification

- **Ecology**
  - Is the human population too large? – population ecology
  - Conserving biodiversity community and ecosystem ecology
  - Where do you live? – Climate and biomes

- **Animal Structure and Function**
  - Organ donation – tissues, organs and organ systems
  - Clearing the air – respiratory, cardiovascular, and urinary systems
  - Vaccinations: Protection and prevention or peril? – immune system, bacteria, viruses, and other pathogens
  - Sex differences and Athleticism – Endocrine, skeletal and muscular systems
  - Is there something in the water?- Reproductive and Developmental biology
  - Attention deficit disorder – brain structure and function

- **Plant Biology**
  - Feeding the World- plant structure and growth.
  - Growing a green thumb – plant physiology
Student Learning Outcomes:

Students who complete this course will:

1. Experience for themselves the process of scientific inquiry and experimentation.
   - Construct hypotheses, identify relevant variables, and design experiments to test hypotheses.
   - Generate and analyze data using computer-assisted technologies.
   - Gain skills interpreting graphs and tables and using mathematics and statistics to evaluate data.
   - As a result, students will be able to distinguish between science and pseudo-science.

2. Appreciate the importance of ethics in science.
   - Understand the vital importance of an ethical approach to scientific inquiry.
   - Explore ethical issues that new technologies raise when applied to human society and to our biosphere.

3. Develop a working understanding of major biological concepts.
   - Evolution is the major unifying theme in biology.
   - Bioethics involved in biological decision making.

4. Learn to work as a part of a collaborative team in problem solving and will engage with other students in the learning process.
   - Practice scientific terminology.
   - Apply biological principles and the process of scientific inquiry to real-world problems.
   - Demonstrate their abilities to explain processes and relationships in a logical and precise manner.

5. Improve problem-solving skills and build abilities to critically evaluate scientific information.
   - Analyze claims of others as presented in the popular press, movies, and television.
   - Recognize that scientific understandings and the scientific process of inquiry are relevant to everyday life decisions.

Communication skills are improved through the development of both oral and written skills. Students will be introduced to appropriate scientific communication skills through technical writing and scientific presentation exercises. Students will have the opportunity to convey concepts by learning to represent information in illustrations, charts, and graphs and also through oral presentations.
G. INSTRUCTIONAL METHODS AND ACTIVITIES

This course uses a variety of instructional methods and activities in order to facilitate student’s learning, including but not limited to: lecture, labs, group activities, student projects, research, and presentations.

H. MAJOR COURSE REQUIREMENTS AND GRADING

GRADE COMPUTATION:

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of LECTURE GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory average (reports, quizzes, assignments, practical, etc.)</td>
<td>25%</td>
</tr>
<tr>
<td>Lecture average</td>
<td>75%</td>
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</tbody>
</table>

The lecture average will be determined on a percentage scale:

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of LECTURE GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture Exams</td>
<td>35%</td>
</tr>
<tr>
<td>Comprehensive final exam*</td>
<td>10%</td>
</tr>
<tr>
<td>Assignments, projects, quizzes, homework</td>
<td>40%</td>
</tr>
<tr>
<td>Attendance &amp; participation</td>
<td>5%</td>
</tr>
<tr>
<td>BIOLOGY related Service Project</td>
<td>10%</td>
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</tbody>
</table>
## I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>DAY</th>
<th>TOPIC</th>
<th>CH.</th>
<th>Reading &amp; other ASSIGNMENTS* (additional as assigned)</th>
<th>LABS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mon</td>
<td>Jun 1</td>
<td>Introductions</td>
<td>Who are you? Who am I?</td>
<td>Complete Info sheet, Read syllabus, class policies (sign) Assignment: (article)Science in News Read Ch 1 &amp; 2</td>
</tr>
<tr>
<td>1</td>
<td>Tue</td>
<td>Jun 2</td>
<td>Can Science Cure the Common Cold</td>
<td>Science Process/Scientific Method/</td>
<td>Service Project assignment CH 1 steps Scientific method</td>
</tr>
<tr>
<td>1</td>
<td>Wed</td>
<td>Jun 3</td>
<td>Accuracy &amp; Measurement</td>
<td>Metric system</td>
<td>Prefix/suffix assignment measurement assignment handouts – metric and measurement Ch 3 Group project Assignment</td>
</tr>
<tr>
<td>1</td>
<td>Thur</td>
<td>Jun 4</td>
<td>Prospecting for Biological Gold</td>
<td>Biological Classification system Classification/Kingdoms/ Nomenclature</td>
<td>Ch12 Read: p276-277 Ch13 Read: p309-310,312-313 TABLE 13.2 Handouts Test 1 review</td>
</tr>
<tr>
<td>2</td>
<td>MON</td>
<td></td>
<td>TEST 1</td>
<td>TEST 1</td>
<td>TEST 1 - CH 1, Measure, Metric, Classification</td>
</tr>
<tr>
<td>2</td>
<td>Mon</td>
<td>Jun 8</td>
<td>The Cell &amp;Chemistry</td>
<td>Are We alone in the universe? – water, biochemistry</td>
<td>BASIC CHEM &amp; WATER</td>
</tr>
<tr>
<td>2</td>
<td>Tue</td>
<td>Jun 9</td>
<td>The Cell &amp;Chemistry</td>
<td>Cells &amp; Cell Structures</td>
<td>Ch 2 Cells &amp; Cell structures</td>
</tr>
<tr>
<td>2</td>
<td>Wed</td>
<td>Jun 10</td>
<td>Is it possible to supplement your way to better health? Genetics: Cancer</td>
<td>Nutrients DNA synthesis Mitosis &amp; Meiosis</td>
<td>Ch 3 Group PROJECT Presentations</td>
</tr>
<tr>
<td>2</td>
<td>Thur</td>
<td>Jun 11</td>
<td>Genetics: Inheritance Genetics: GMOs</td>
<td>Traits, Genes, Mendel, &amp; Punnett Squares Gene expression, mutation and cloning.</td>
<td>Ch 7 Sponge Bob Ch 9 Review for test 2</td>
</tr>
<tr>
<td>Date</td>
<td>Monday</td>
<td>Tuesday</td>
<td>Wednesday</td>
<td>Thursday</td>
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<tr>
<td>Jun 15</td>
<td>TEST 2</td>
<td>TEST 2</td>
<td>TEST 2</td>
<td>TEST 2</td>
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<tr>
<td>Mon</td>
<td>Evolution Where did we come from</td>
<td>Evidence for evolution</td>
<td>Ch 10 Ch 10</td>
<td>READ CH 10-12 Ch 10</td>
<td></td>
</tr>
<tr>
<td>Tue</td>
<td>Evolution - An evolving enemy</td>
<td>CH 10 Cont. Evolution through natural selection</td>
<td>CH 10 Ch 11</td>
<td>Lab EX 13</td>
<td></td>
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<tr>
<td>Wed</td>
<td>CH 11 CONT. CH. 12</td>
<td>11 12</td>
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<tr>
<td>Thur</td>
<td>Evolution – species and races</td>
<td>Evolution - Species</td>
<td>Ch 12</td>
<td>Review for test 3</td>
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</tr>
<tr>
<td>MON</td>
<td>Jun 22</td>
<td>TEST 3</td>
<td>TEST 3 EVOLUTION</td>
<td></td>
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<tr>
<td>Mon</td>
<td>ECOLOGY</td>
<td>Community and ecosystem ecology</td>
<td>Handouts Organ Donation Res. Paper assignmt</td>
<td>LAB EX 21 &amp; LAB EX 22</td>
<td></td>
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<tr>
<td>Tue</td>
<td>ECOLOGY</td>
<td>Climate and biomes</td>
<td>16</td>
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<tr>
<td>Wed</td>
<td>ECOLOGY</td>
<td>Where do you live?</td>
<td>Outdoor Ecosystem observations</td>
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<td></td>
</tr>
<tr>
<td>Thur</td>
<td>ECOLOGY</td>
<td>Outdoor Ecosystem observations</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>MON</td>
<td>Jun 29</td>
<td>TEST 4</td>
<td>TEST 4 ECOLOGY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mon</td>
<td>Animal Structure and Function - Organ Systems</td>
<td>Organ Systems - tissues, organs and organ systems</td>
<td>Handouts</td>
<td>LAB EX 14 LAB EX 15 LAB EX 17</td>
<td></td>
</tr>
<tr>
<td>Tue</td>
<td>CONT.</td>
<td>Organ Systems - CONT</td>
<td>Service Project paper due</td>
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<tr>
<td>Wed</td>
<td>REVIEW FOR FINAL</td>
<td>Organ donation</td>
<td>Organ Donation Research Paper Due</td>
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<tr>
<td>Thur</td>
<td>FINAL</td>
<td>FINAL</td>
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Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.
J. COURSE POLICIES

ATTENDANCE POLICIES

Attendance is mandatory. Excused absences require contacting the instructor. Students with a university approved scheduled absence (athletics, military duty, etc.) MUST contact the instructor well in advance of a scheduled absence.

Family vacations and celebrations of your birthday are worthwhile, but are not classified as excused absences. If you book an airplane flight or non-emergency appointment which conflicts with class, I do NOT consider that to be an excused absence. Routine events should be scheduled to avoid class conflicts. In general, only unavoidable and documented absences are excused (major family illness or accidents, deaths, funerals).

I WILL BE TAKING ATTENDANCE AT EACH CLASS. STUDENTS ARE GIVEN ONE UNEXCUSED ABSENCE PER SEMESTER FOR THIS CLASS. AFTER THAT ABSENCE, THEY WILL RECEIVE A FIVE (5) POINT DROP IN THEIR FINAL GRADE FOR EACH ADDITIONAL UNEXCUSED ABSENCE. LEAVING CLASS EARLY/ARRIVING LATE FOR CLASS WILL COUNT AS HALF (½) OF AN ABSENCE.

Unacceptable Excuses: Only unavoidable absences are excused (see above), so you should schedule routine personal events (e.g., vacations, wedding, reunions, non-emergency medical or dental visits, parent-teacher conferences, household or auto repairs) to avoid conflicts with your classes. Oversleeping is never an acceptable excuse. Employment conflicts are not acceptable excuses for absences, tardiness, or leaving class early. Texas waves jury duty for students, so jury duty is not an acceptable excuse. If you arrange to take any test at an alternate time and do not show for that appointment, then you forfeit the opportunity to take the test except at its originally scheduled time.

It is the responsibility of the student to obtain any material missed during an absence from his/her classmates. It is always your responsibility to determine what happened in class or laboratory during your absence. If you are absent, you must obtain any handouts or assignments from me in my office on your own time. I rarely bring assignments to class more than once. You must obtain class notes from other students.

Special circumstances may warrant deviating from these guidelines (including administering a “make-up” examination) and will be referred to the Vice President of Student Affairs. This also applies to any situations for which you cannot provide an acceptable excuse as outlined above.
Late Work and Make-up Exams
Quizzes, Labs, and points missed because of an unexcused absence (including tardiness and leaving early) cannot be recovered. An excused absence (with documentation) allows me to make alternative arrangements for completing SOME assignments. The documentation required for an absence to be excused must be:
- from an appropriate source (e.g., doctor, dentist, funeral director) who states the nature of the event that caused (or will cause) your absence.
- in writing, on official stationary, and signed. (I do not return excuses to you.) Telephone calls, FAXes, and e-mails are not acceptable.
- presented prior to the absence for a scheduled event (e.g., university-sponsored activity, recognized religious holiday, military service).
- presented no more than one week after the date of an unexpected absence.

Extra Credit
I do not provide extra credit assignments for the course. I do occasionally offer extra credit points, but these are rare.

Cell Phone & Laptop Use
No cell phone, computer, iPad, iPod etc. use during class. TEXTING – not during class or lab. For emergency purposes, (you must discuss with me first), you may have your cell phone ON SILENT, on your desk. If you get an emergency call, please take it outside.

Missed Exam
No makeup exams will be allowed for an unexcused absence. All make up exams will be given the last week of the semester.

Participation
Group work, class activities, labs, and quizzes cannot be made up. So attendance and active participation are required of all students.

Other
ASSIGNMENTS are due on time. I do not accept late work. If you don’t understand an assignment, please do NOT wait until 10:00 the night before it is due to contact me about it. The same goes for studying for a test – please don’t wait until the last minute to demonstrate that you haven’t started studying yet. Procrastination on your part does NOT constitute an emergency on my part.

K. COLLEGE AND UNIVERSITY POLICIES
- Academic Integrity (University)
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit
possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- **Classroom/Professional Behavior**
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must be submitted. No student is eligible to receive a W without completing the official drop process by this deadline. Please consult the Academic Calendar (http://www.tamucc.edu/academics/calendar/) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  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](http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage at [http://sci.tamucc.edu/students/GradeAppeal.html](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.

- **Disability 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 (361) 825-5816 or visit Disability Services 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) 825-5816. [http://disabilityservices.tamucc.edu/](http://disabilityservices.tamucc.edu/)

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

### L. OTHER INFORMATION

- **Academic Advising**
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

### GENERAL DISCLAIMER

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.