Texas A&M University – Corpus Christi
Fall 2014
COURSE: Biology 1308 Science for Life

BIOL 1308_001 (Lec)  BIOL1308_101(Lab)
Lec & Lab TR 9-11
Fall 2014
Phone: 361-825-2166

Instructor: Terri Nicolau
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Office Hrs: 8-9am M-Th, 2-3pm Mon
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You must be registered for BOTH COMPONENTS of this course:
BIOL 1308_001  &  BIOL1308_101

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.

Texts/Supplies: REQUIRED

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.

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 everyday life and as citizens.
Major concepts include:

- Cells and Chemistry:
  o Are we alone in the universe? – Water, biochemistry, and cells.
  o Is it possible to supplement your way to better health? – Nutrients and membrane support.
  o Fat: How much is right for you? – Enzymes, metabolism, cellular respiration.
  o Life in the greenhouse.-photosynthesis and global warming
• Genetics
  o Cancer – DNA synthesis, mitosis and meiosis.
  o Are you only as smart as your genes? – Mendelian and quantitative genetics.
  o DNA Detective – Complex patterns of inheritance and DNA fingerprinting.
  o Genetically modified organisms – Gene expression, mutation and cloning.
• Evolution
  o Where did we come from? – The evidence for evolution.
  o An evolving enemy – natural selection
  o Who am I? – species and races
  o Prospecting for biological gold – biodiversity and classification
• Ecology
  o Is the human population too large? – population ecology
  o Conserving biodiversity community and ecosystem ecology
  o Where do you live? – Climate and biomes
• Animal Structure and Function
  o Organ donation – tissues, organs and organ systems
  o Clearing the air – respiratory, cardiovascular, and urinary systems
  o Vaccinations: Protection and prevention or peril? – immune system, bacteria, viruses, and other pathogens
  o Sex differences and Athleticism – Endocrine, skeletal and muscular systems
  o Is there something in the water?- Reproductive and Developmental biology
  o Attention deficit disorder – brain structure and function
• Plant Biology
  o Feeding the World- plant structure and growth.
  o 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 data and analyze data using computer-assisted technologies.
   • Gain skills interpreting graphs and tables and using mathematics and statistics to evaluate data.
   • Use computers to retrieve information from databases.
   • 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.

**GRADE COMPUTATION:**
Laboratory average (reports, quizzes, assignments, practical, etc.) .......... 25%
Lecture average ................................................................. 75%

The lecture average will be determined on a 500 point scale:
- Assignments, participation, attendance 100 pts
- 3 lecture exams (100 points each) 300 pts
- Comprehensive final exam* 100 pts

**GRADING SCALE:**
- 90.0 – 100.0 = A
- 80.0 – 89.9 = B
- 70.0 – 79.9 = C
- 60.0 – 69.9 = D
- 0.0 - 59.9 = F
**ATTENDANCE**

**Attendance is mandatory.** All students are expected to attend all classes and labs. There are no excused absences. Students with a university approved scheduled absence (athletics, military duty, etc.) **MUST** contact the instructor well in advance of a scheduled absence.

***Please turn off or place on silent mode all cell phones, beepers, tablets, computers, etc. before entering the class.***

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**Academic Integrity/Plagiarism***

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 grade of zero for the work and possible dismissal from the class.

**Dropping a Class***

I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, **you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form.** Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. November 7 is the last day to drop a class with an automatic grade of “W” this term.

**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 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.
Disabilities Accommodations***
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) 825-5816.

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.

General Disclaimer: The Instructor reserves the right to modify the schedules and policies in this syllabus if and when necessary. Such changes will be announced during regularly scheduled lecture or laboratory periods, but no attempt will be made to contact students who were absent when an announcement was made. Students are responsible for abiding by all announced changes, and it is a student’s responsibility to obtain this information.
Biology 1308 Science For Life
SYLLABUS / COURSE SCHEDULE

1. Science Process/Scientific Method
   a. Accuracy and Measurement 9/1
   b. *Can Science Cure the Common Cold 9/8

2. The Cell and Chemistry
   a. Are we alone in the universe? – water, biochemistry and cells 9/15
   b. Is it possible to supplement your way to better health? – nutrients and membrane support. 9/22

3. Genetics
   a. Cancer – DNA synthesis, mitosis and meiosis 9/29
   b. Genetically modified organisms – gene expression, mutation and cloning. 10/6

4. Evolution
   a. Where did we come from – the evidence for evolution 10/13
   b. An evolving enemy – natural selection 10/20
   c. Who am I? – species and races 10/20

5. Ecology
   a. Conserving biodiversity community and ecosystem ecology 10/27

6. Animal Structure and Function
   a. Organ donation – tissues, organs and organ systems 11/3
   b. Cleaning the air – respiratory, cardiovascular, and urinary systems 11/10
   c. Vaccinations: Protection and prevention or peril? Immune System, bacteria, viruses, and other pathogens. 11/17

7. Plant Biology
   a. Feeding the world – plant structure and growth 11/24