First Year Learning Community. Biology 1406, Introductory Biology I, Fall 2012

We meet in CI 138 MWF 11:00 or MWF 1:00

Sections meeting at these times are 1406.730 (1S), 1406.731 (2S), 1406.732 (3S), 1406.733 (3S), 1406.801 (1V), 1406.802 (2V), 1406.803 (3V), 1406.804 (4V), 1406.851 (1W), 1406.852 (2W), 1406.853 (3W), and 1406.855 (4W)

Labs meet in CI 207 or CI 208

The instructor of record is Dr. David J. Grisé who is assisted by STEP mentors Mariela Rivera, Trevor Brue, Abbie Johnson, and Cori Speights. In addition, several CELLS mentors assist with the course and your transition to TAMUCC by visiting first-year seminar sections on a regular basis.

Funds for the STEP mentors are provided by the Science, Technology, Engineering and Math Talent Expansion Program (STEP). The STEP mentors facilitate outside of class sessions that you can attend for help with the course. Please consider attending their sessions.

Very few if any students read the syllabus for any of their courses. Please take a few minutes to look over the syllabus so you have a better understanding of this course.

Office EN 311, e-mail david.grise@tamucc.edu, phone 825 3477

class web site: Please see BlackBoard

Office hours xx, xx, xx, other hours by appointment

OVERALL CONTEXT

-Course description: Presentation of basic biological concepts including scientific method, cytology, energetics, nucleic acids and genetics. This course is suitable for all majors. This course counts toward the natural science component of the University Core Curriculum.

-General student learning outcomes for all sections of bio 1406
1. To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry.
2. Understand the chemical basis of processes in living organisms.
3. Have a functional knowledge of the theory of evolution and understand its importance as the unifying theme in biology.
4. Understand the process of inheritance.
5. To recognize DNA technology as an interdependence of science and technology and understand the influence of DNA technology on, and contribution to, modern culture.

-A community of learners. You are part of the first year learning community at Texas A&M University-Corpus Christi. I hope you are, or will become, an active member of this learning community. Each time I teach a course, I learn from students. I hope to establish an atmosphere in which students learn from each other. As a result of taking my class and working with your fellow
students, I hope you learn how to learn about issues that have a biological basis. We should all be learning from each other and learning how to learn from each other. As a result of our collective efforts, I hope I continue to improve as an instructor and that you benefit from taking my course.

**RESOURCES TO ASSIST YOU IN BIO 1406.**

**STEP sessions**  
The data below indicate that students participating in sessions on a regular basis, about once a week, do better in the course than do students participating in sessions less often. Scientists make decisions based upon data. Here are the data! The conclusion from these data are that you should **participate in sessions on a regular basis!**

**Effect of attending STEP mentoring sessions Fall 2011**

Bars with different letters are significantly different (Tukey's multiple range test)

**STUDENT-CENTERED LEARNING**  
**Team Learning:** We will use a team learning approach in this class. Permanent team learning groups will be established at the start of the course. We will use the team learning approach on in-class team learning assignments and group exams as described below.

In-class team learning assignments: Students will come to class having read the assigned portion of the text. These readings will be announced in lecture in advance of the in-class team learning assignment. These readings will also be listed on BlackBoard. On Friday class meetings, using the
Qwizdom responders, students will INDIVIDUALLY submit their own answers to questions about the text reading. Then, each team learning group will discuss the same questions and submit a group answer to the questions.

Each in-class team learning assignment is worth 30 points. Your individual answers to these questions count for 40% of your score (12 points) for the in-class team learning assignment. The other 60% of the score (18 points) for each in-class team learning assignment will be based on your group’s answers to the questions. You are not permitted to use cell phones, the text or notes about the readings for either portion of the assignment. Use of cell phones is prohibited during any part of the team learning assignments and team learning exams. If we see a cell phone, will take the phone and put it up front so you can pick up your phone after class.

After the group portion of the exam is completed, you may use the text or your notes to better understand the answers to the questions or to appeal questions.

Team learning exams. We use team learning techniques for exams. On Monday of exam weeks, groups will answer questions on the team learning exam. I expect that all members of the group will participate in answering these questions and understand the group’s answer to these questions. Because many of the questions on the group and individual exams are similar, I hope the team learning exams help you to prepare for the individual portion of the exam.

Appeals: Once the assignment or exam has been completed, students may use any resource they wish to appeal any question for which the group feels the answer is incorrect or the question or answer choices are unclear. All appeals must be in writing, must fully explain why the group feels there is a problem with the question and must be agreed to by the entire group. If the group’s appeal is granted, the scores of all group members will be adjusted. Appeals must be given to the instructor before he leaves the classroom.

-Daily in-class assignments: For almost every lecture, there will be a question worth a small amount of points to start lecture. Also, during lecture there will be questions for points. Students are encouraged to discuss these questions with other students. In addition, there will be a few times when groups will work on questions related to course material. These questions are designed to help students understand how to answer questions on the exams.

I will not accept a piece of paper with your answers for ANY question answered using Qwizdom responders. There are no exceptions to this policy.

-Calibrated Peer Review (CPR) assignments. Using guiding questions, you will summarize parts of chapters containing material covered in the course. Doing these assignments should help you to better understand the material and better understand the process of scientific writing. Questions on exams will ask you about material covered in these assignments. The link to access the CPR system is on BlackBoard. All students are expected to be able to access this system, submit their summaries and complete the assignments on time.

Be sure you access the system for the first time well in advance of the deadline for submission of your summary for the first assignment. Report any problems to Dr. Grisé immediately. Dr. Grisé will NOT submit summaries for any student. If a student misses the deadline for text entry, they will not be able to complete the remaining portions of the assignment and will receive a zero out of
25 points for the assignment. Should a student submit their summary but fail to complete the assignment, it is likely that their score for the assignment will be about 4 points out of 25 points. Missing a CPR deadline may drop in your grade in the course down by a whole letter grade. Don’t let this happen to you! Because you have several weeks to complete these assignments, there will be no exceptions to this policy. Please do not allow these assignments to negatively affect your grade in the course. Take time to write your summary, complete the calibrations and review other students work. Be sure you complete the assignments in a timely manner. Remember that the material on these assignments is very important and may not also be covered in lecture. However, exam questions will be based on this material.

Because I have approximately 500 students in my sections of 1406, I cannot review grades on CPR assignments. I will not review a grade on a CPR assignment for any student. I have to trust that students will carefully and fairly review other student’s work.

The CPR assignments are a significant amount of work for both you and me. I only use teaching techniques and technology that improve student understanding and skills. One important skill to have as a scientist is the skill to review other people’s work. I have data indicating that students become more competent reviewers over the course of the semester. These data are the reason I continue to use the CPR system. Please put time and effort into the CPR assignments. Doing so will help you gain a valuable and useful skill that will be useful in your career.

**EXAMS**

To reduce our impact on the environment, Qwizdom responders rather than paper scantrons will be used to record your answers for the exams.

In addition to a 10 point exam on 31 August, there are a total of five individual exams (three individual exams given during a lecture period and the fourth exam and comprehensive exam given at the time scheduled for the final). The three individual exams given during a lecture period are 100 points each. The final is a two part exam for a total of 200 points. The first 100 points of the final covers the last block of material (it is the blocks of material. You may use calculators during all exams. However, use of cell phone calculators or calculators on devices that can connect to the internet is **NOT** permitted. No other electronic devices of any kind are permitted during exams.

I do not assign a curve to each exam. For dates of the exams, CPR assignments and due dates for the team learning assignments, please see the calendar on BlackBoard.

**RESOURCES REQUIRED FOR BIO 1406**

- **Lab coats.** All students are required to have a lab coat when entering the labs for any reason. In addition, to the lab coat, students must be wearing long pants and closed-toe, closed-heel shoes to enter the labs at any time. For more details about lab coats, please contact your CELLS mentor. They may be able to suggest where to buy a lab coat, etc.

- **All students must have a TAMU-CC e-mail account**
  All students must have a TAMU-CC e-mail account (your Islander account). I e-mail your grades to your islander e-mail account. Grades will **NOT** be posted anywhere! If you don’t have an account, please go to [http://www.tamucc.edu/ise.html](http://www.tamucc.edu/ise.html) to obtain a new islander account. Either
check your islander e-mail account on a regular basis or forward your islander e-mail to your hotmail, yahoo, etc. e-mail account.


-Lab Manual: Laboratory Manual for Biology 1406, Fall 2012. All are available at the University Bookstore.

-Qwizdom responders. A Qwizdom Q4 student responder with batteries is required for every lecture. You are not permitted to use another student’s responder. Answering questions for another student not present in lecture is cheating and will not be tolerated. If you are seen using two responders, both will be confiscated and we will all sort it out later.

I will NOT check the results of a Qwizdom assignment for ANY student. When you take an assignment using Qwizdom, the Qwizdom responder shows you the answer you selected. Be sure you see the answer you intended to select. Since I have been using the Qwizdom system, I have checked answers at the request of students well over one hundred times. I have never found a problem with the Qwizdom system. Most of the time, a student mistakenly selected an incorrect answer or didn’t answer the question at all.

Dead batteries or “missing” responders: If you do not bring your Qwizdom responder to class, you might be able to sign out one of my responders. You will leave me your ID and pick up your ID when you return the responder. I only have a few responders. If all are signed out and you do not have your responder, I will NOT accept a paper copy of the answers to that day’s questions. The same is the case for batteries. If batteries in your responder go low, please get the attention of one of my assistants. They may be able to help you sign out batteries.

UNIVERSITY AND CLASS POLICIES

-Class attendance
My attendance policy is the same as the University's. Please read the University’s attendance policy in the catalog. I expect students to attend every scheduled class meeting including labs. Attendance is not used to determine grades. If you come to class often, you should do well in my course. In addition, there will be in-class assignments during most lectures, so coming to lecture on a regular basis should result in a higher grade.

-Scores sent by e-mail
Please check your scores I send to your Islander e-mail account! It is your responsibility to be sure that I have correctly recorded your scores. From the time I e-mail grades for an assignment or exam, you have five class days to inform me there might be a problem with your score. After five class days, I will assume that scores for that assignment or exam are correctly recorded.

-Dropping the course
If you drop the class between 30 August and 2 November, you will be assigned a grade of W. Please be sure you read and understand the University’s drop policy found in the University catalog before you drop any class. Please consult me before dropping this class. If we decide dropping the class is the best option, you must initiate the process of dropping the course by going to Student Services Center (the round building) and fill out a course drop form.
- **Academic Honesty**
  All students are expected to be familiar with TAMU-CC's Academic Honesty Statement found in the University catalog.

- **Students with Disabilities and Veterans**
  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 Driftwood 101.

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 Appeal Process.** As stated in University Rule 13.02.99.C2, Student Grade Appeals, 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 Rule 13.02.99.C2, Student Grade Appeals, and University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Web site at [http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html). For assistance and/or guidance in the grade appeal process, students may contact the Office of Student Affairs.

- **Academic Advising**
  The College of Science and Technology 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. The College's Academic Advising Center is located in Faculty Center 178, and can be reached at 825-6094.

- **Make-up exams and other work**
  I strictly adhere to the University policy regarding make-up exams. If you miss an exam for an approved University-related event (attendance at a scientific meeting, athletic event, etc.) you will be allowed to take a make-up exam. I would appreciate being reminded of this situation before the exam.

If you miss an exam for personal reasons, medical reasons or family circumstances, please contact me as soon as possible.

- **Religious obligations**
Any student missing class for religious obligations will be excused from class assignments for the days they miss. A student must tell me in advance of the days they will miss and I will excuse them.

**EXTRA CREDIT**

**THERE IS NO EXTRA CREDIT!**

**THERE IS NO EXTRA CREDIT!**

**THERE IS NO EXTRA CREDIT!**

**THERE IS NO EXTRA CREDIT!**

**EVALUATION OF STUDENTS**

There are a total of xxxx points. Grades will be assigned as follows:

A= 89.5-100 % of total points
B= 79.5-89.4 % of total points
C= 69.5-79.4 % of total points
D= 54.5-69.4 % of total points

I use the above percentages to assign grades. After reading this section, you should know how I am going to assign grades. Please be sure you get enough points to get the grade you want. There will always be someone who just missed a D, or a C, or a B, or an A. I have to draw lines between grades. No matter where I draw the line, someone is on the wrong side of the line. Don't let that someone be you. You have plenty of help in my class. Take advantage of the resources I offer.

<table>
<thead>
<tr>
<th>assignment</th>
<th>points</th>
<th>% of grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>individual exams</td>
<td>510</td>
<td>30.5</td>
</tr>
<tr>
<td>team learning group exams</td>
<td>150</td>
<td>9.0</td>
</tr>
<tr>
<td>daily questions</td>
<td>300</td>
<td>18.0</td>
</tr>
<tr>
<td>case studies</td>
<td>100</td>
<td>6.0</td>
</tr>
<tr>
<td>calibrated peer review</td>
<td>100</td>
<td>6.0</td>
</tr>
<tr>
<td>interdisciplinary experience</td>
<td>100</td>
<td>6.0</td>
</tr>
<tr>
<td>lab</td>
<td>400</td>
<td>24.0</td>
</tr>
<tr>
<td>1st year program survey</td>
<td>10</td>
<td>0.6</td>
</tr>
<tr>
<td>total</td>
<td>1670</td>
<td>100</td>
</tr>
</tbody>
</table>

The interdisciplinary experience is the First Year Research Conference poster. The grade on this poster is used in all your other learning community courses. In my class, the grade on the poster will account for a total of 100 points.

**EXAM DATES**

Exam dates for all sections are 31 August (10 point exam), 21 September, 19 October, and 9 November.
The final exam for MWF 11:00 sections is scheduled for Friday, 7 December 11:00-13:30. The final exam for MWF 1:00 sections is scheduled for Wednesday, 12 December 11:00-13:30. ALL students MUST take the final exam at the proper time. Please let me know in advance if you are unable to take the exam at the proper time.

Schedule of Lecture topics
As a result of HB 2504, syllabi are to include a schedule of topics to be covered each lecture. The schedule for the fall semester is to be determined in April. I pace the class based on student understanding of the course material. I do not move on unless I think the majority of students understand the material. I use many methods to convey material during class. Because in April it is difficult for me to determine what I am doing on 17 November, this is a tentative schedule and is subject to change. Actually, what is below is mostly a total guess. Notice that the dates are not correct. These are the dates for fall 2010. There is not chance that the schedule below will actually match up with what occurs in the classroom. I doubt anybody is reading the syllabus down to this page. I only include this section because I must. To get a realistic appreciation of what we will cover and when we will cover that material, please see the lecture slides posted on BlackBoard. We cover about 20-25 slides per lecture. I spend a lot of time working on the lecture slides for the course. I will not spend time repeating the contents of those slides here.

24 August, first day of class. Introduction of myself, CELLS mentors, SI leaders and STEP mentors. Expectations for the course. How lab relates to the course. Why bio 1406 is a core science course and the reason why we have core courses. Why this is a great time to be a scientist and how you can become a scientist

26 August. Pre-class survey, discussion of theories of intelligence.

29 August. Discussing the products of science

31 August. Discuss the products of science and start on the nature and logic of science

Basic experimental design. Inductive and deductive reasoning

2 September, first team learning assignment, chapter 2

7 September, observations and facts. Inductive and deductive reasoning

9 September, second team learning assignment, chapter 3

12 September, truth table, experimental design

14 September, experimental design, standard deviation

16 September, third team learning assignment, chapter 6

19 September, presentation of data on graphs, interpretation of graphs, trade offs

21 September, 1st group exam.
23 September, 1<sup>st</sup> individual exam.

26 September, reading intervention for FYI, creativity in science, examples of how a person’s background affects the questions they ask as a scientist and why it is important that not all scientists look like me (bald white guy).


30 September, fourth team learning assignment, chapter 6, metabolism

3 October, carbon, macromolecules, cell size and diffusion

active transport, enzyme function, factors affecting enzyme function, competitive and non-competitive enzyme inhibitors

5 October, Cellular respiration

7 October, fifth team learning assignment, chapter 9, cellular respiration

10 October, cellular respiration, fermentation pathways

12 October, the cell cycle

14 October, mitosis and meiosis

17 October, the importance of meiosis to sexually reproducing organisms

19 October, 2<sup>nd</sup> group exam.

21 October, 2<sup>nd</sup> individual exam.

24 October, DNA structure, chromosomes, homozygous and heterozygous

26 October, dominance relationships, PTC case study

28 October, 7<sup>th</sup> Team Learning assignment

30 October, regulation of RUBISCO, chi square test to determine location of loci

2 November, chi square test to determine location of loci, incomplete dominance

4 November, 8<sup>th</sup> Team Learning assignment

6 November, codominance, allele frequencies

9 November, 3<sup>rd</sup> group exam.
11 November, 3rd individual exam.

14 November, PCR so that can better understand lab, multiple alleles, ABO blood types

16 November, ABO blood types, lethal alleles, interacting genes, polygenic inheritance, environmental effect on phenotype

18 November, 9th Team Learning assignment

21 November, X chromosome inactivation, genes on X chromosome, protein structure, linkage and mapping, operons

23 November, buying local at farmers’ markets, reducing carbon footprint by buying local at farmers’ markets, problems on interaction genes, X chromosome, lethal alleles and DNA gels

28 November, genetics

30 November, DNA technology, PCR

2 December, DNA technology, determining what is present in PCR products

5 December, DNA technology, biological races, the lack of biological races in humans