First Year Learning Community. Biology 1407, Introductory Biology II, Spring 2012
Sections include non-STEP non-Honors, STEP, and Honors
Sections H50, 882, 883, 884, 885, 891, 892, and 893
Lectures: CI 113 MWF 11:00
Labs: CI 207 or CI 208

The instructor of record is Dr. David J. Grisé who is assisted by Caitlin Bailey, Mariela Rivera, Cori Speights and Abbie Johnson (STEP mentors). In addition, several CELLS mentors assist with the course by visiting seminar sections on a regular basis.

Office ST 311, e-mail david.grise@tamucc.edu, phone 825 3477
class web site: Please see Blackboard. If any course materials state anything about WebCT that means that I forgot to change WebCT to Blackboard. There are no materials for the course on WebCT.
Office hours will be posted on Blackboard. Other hours by appointment

OVERALL CONTEXT
Course description: This course is an overview of the major concepts in biological diversity and plant and animal biology. 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.

Exemplary education objectives for core courses met by bio 1407
- To understand and apply method and appropriate technology to the study of natural sciences.
- To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.
- To identify and recognize the differences among competing scientific theories.
- To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.
- To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.

Specific learning outcomes for these sections of bio 1407
- To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry.
- Be able to formulate testable hypotheses and predications from these hypotheses.
- Have a functional knowledge of the theory of evolution and understand its importance as the unifying theme in biology.
- Understand how the modern synthesis combines evolutionary theory with Mendelian genetics and advances in other fields
- Have a working knowledge of the Hardy-Weinberg Law or Equilibrium. Understand that this is the basis of comparison and it is the as the expectation when no evolutionary forces at work in a population
-Understand how evolutionary forces (gene flow, genetic drift, mutation) act in populations and how these forces can lead to speciation or prevent speciation.
-Understand how the fundamental differences in animal and plant life cycles influence inheritance of mutations and speciation.
-Understand how natural selection can lead to a loss of genetic diversity in populations or can lead to maintenance of genetic diversity in populations.
-Understand the mechanisms that can lead to speciation.
-Have an understanding of phylogeny and systematics.
-Understand a portion of the vast biological diversity on our planet.
-Have a working knowledge of ecological concepts in population and community ecology.
-Understand aspects of physiology including animal and plant body organization, transport in both groups and homeostasis.
-Understand that this is an important part of the syllabus to read because it summarizes what you should take away from the course.

**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 1407.**

-**Supplemental Instruction (SI) sessions**
  The purpose of Supplemental Instruction sections is not to teach material for the first time or to cover material that we don’t have time to cover. Rather, SI sessions provide a structured setting for you to ask questions about the material covered in lecture or the material in the readings from the text. Material from the readings for the TLAs will not be covered in class. Asking questions you have about the material for the TLAs during office hours or SI sessions is an efficient way to better understand the material in the readings.

Megan Arnold is the SI leader for the learning community sections of bio 1407. Please see the course Blackboard site for a schedule of Megan’s SI sessions. Please take advantage of Megan’s expertise. Please consider attending SI sessions regardless of your grade in the course. Students doing well in the course and students who are not doing so well in the course will benefit from attending SI sessions. Also, don’t wait until the session before the exam to start attending SI sessions. I have data that indicates that attending SI sessions on a regular basis increases your grade in the course. A great way to prepare for the comprehensive final is to attend the SI session just after an exam. At these sessions, Megan can go over any questions on the exam you had difficulty answering correctly. Asking questions about the questions you did not answer correctly on the exam will help you answer the question correctly on the comprehensive final.

-**Captivating and Engaging Leaders in Life Sciences (CELLS) mentoring program.**
  All first-year biology majors will be assigned a CELLS mentor. CELLS mentors are sophomore, junior, or senior level students who have done well in my 1406 and 1407 classes. Your CELLS mentor will regularly visit your seminar class to answer questions and provide perspective on how to do well in my class and your future biology classes. They will also be able to answer questions...
about core classes and instructors for those classes. Please contact your CELLS mentor if you have questions about anything at the University. Because they are students, they have had to contact many of the University offices that you will deal with during your time at TAMUCC. Your CELLS mentor will be able to direct you the proper University resource. Take advantage of their experience for both class-related and University-related issues.

I am extremely grateful that so many students are volunteering their time to be a CELLS mentor. Their willingness to take time out of their busy schedule to assist students in this class is evidence of their commitment to the University, the Department of Life Sciences and to this class. Please take advantage of their willingness to help you succeed during your first year.

**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. Students will answer questions on their own then team learning groups will answer the SAME questions. Team learning groups will submit group consensus answers to questions. Research examining team learning assignments show that the group score is HIGHER than individual scores and that students understand concepts much better as a result of discussing questions and course material in groups. We will use the team learning approach on in-class team learning assignments 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 the calendar on Blackboard. On Friday, 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 the text or notes about the readings for either portion of the assignment. After the group portion of the exam is completed, you may use the text to better understand the answers to the questions or to appeal questions.

Team learning exams. We use team learning techniques for exams. On Wednesday, groups will answer the team learning exam. On Friday, individuals will answer different exam questions. I hope the team learning exams help you to prepare for the individual portion of the exam.

Cell/smart phones and computers. Use of devices that can connect to the internet will not be allowed during the individual or group portion of team learning assignments or during group exams. If a student is found to be using a cell phone or computer the cell phone or computer will be taken and put on the desk up front so the student can pick up their phone or computer after class.

Appeals: Students may not use the text, notes, or other resources during either the individual or group portions of in-class team learning assignments or team learning exams. However, 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. All appeals must be to me before I leave the classroom. If the group’s appeal is granted, the scores of all group members will be adjusted.

Peer evaluation: Students will evaluate all the members of their group. The scores on these evaluations will be based on the contribution group members make to team learning assignments and exams.

Any group member receiving a score of 7 or less from two or more group members on the peer evaluation for group work completed towards the end of the semester, will have their team learning assignment scores for group work reduced. The way these group scores will be reduced is that a zero will be assigned for the grade for the group portion of the 9th and 10th team learning assignments.

Any student who does not turn in a complete evaluation of group members with ALL group member names on the evaluation will be assigned a zero for the grade for the group portion of the 9th and 10th team learning assignments.

Absences: You MUST be present in class to receive points for the group portion of the team learning assignments. The only exceptions are medical appointments and University sponsored events. In the case that you have a scheduled medical appointment or University sponsored event that prevents you from attending lecture, please let me know in advance of lecture. Should you not be able to attend lecture due to a medical emergency, please let me know about the situation as soon as possible. Please note that we WILL have class 22 April and we will have the 9th Team Learning Assignment during this class meeting. The above mentioned policy will be strictly enforced for this Team Learning Assignment.

-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 members of their team learning group. 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.

-Qwizdom responders. You are required to bring your functioning Qwizdom responder to each class meeting. You MUST be present to receive credit for in-class assignments. The only exceptions are medical appointments and University sponsored events. In the case that you have a scheduled medical appointment or University sponsored event that prevents you from attending lecture, please let me know in advance of lecture. Should you not be able to attend lecture due to a medical emergency, please let me know about the situation as soon as possible. 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.

Answers to any type of Qwizdom question that are written on paper will NOT be accepted. There are no exceptions to this policy. I have a few responders that you can sign out should you forget your responder. I have extra batteries that you can sign out if your batteries go low. If you forget your responder and all my extra responders are signed out, you will not be able to answer the Qwizdom questions. Note: Because somebody walked off with one of my responders and the
battery trading thing didn’t work last semester we will require students to give us their ID to get a responder or batteries. They will give us back the responder or batteries at the end of the class.

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.

-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 me immediately. I 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 a lot of students in my intro biology sections, I cannot review grades on CPR assignments. 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. The analysis below indicates 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.

Results of repeated measures Analysis of Variance (ANOVA) where the student is the repeated unit indicate that students become more competent reviewers over the course of the semester.

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-Engaging in science
At this point of your career, you may or may not have some idea of what scientists actually do and how to evaluate scientific ideas. This assignment will assist you in gaining a better idea of what scientists do and how they communicate their results to other scientists and to the general public.

We will not spend a lot of time going over individual organisms in the “march through the kingdoms” section. To become better aquatinted with an organism and how organisms can be used to answer questions, you will select an organism and submit the following assignment to the appropriate Blackboard drop box. So that I have time to read these assignments and comment on them, the due date is dependent on the first letter of your last name. The due dates below were randomly selected.

If your last name begins with A, B, C, or D the deadline to submit your assignment is 1 April.
If your last name begins with E, F, G, or H, the deadline to submit your assignment is 18 February.
If your last name begins with I, J, K, or L, the deadline to submit your assignment is 11 March.
If your last name begins with M, N, O, or P, the deadline to submit your assignment is 25 February.
If your last name begins with Q, R, S, or T, the deadline to submit your assignment is 15 April.
If your last name begins with U, V, W, X, Y or Z, , the deadline to submit your assignment is 25 March.

For the assignment, select an organism and tell me how it is classified (kingdom, phylum, etc.). List a few other organisms that are closely related to the organism you selected. Then, find at least one primary research paper that uses the organism you selected as a study species. The paper could be medical-related, about the genetics of the organism or the ecology of the organism. Summarize the paper being sure to state the question(s) the authors were asking and their conclusions. Be sure you correctly cite the primary research papers you use. Failure to cite the primary research sources in a manner that would allow me to find the paper will result in zero points for the assignment.

Supplementary Questions. Although not for points, for each exam, there will be a set of supplementary questions posted on Blackboard. Answering these questions should help you to better understand the course material. Going to SI sessions and discussing your answer to these questions with other students and the SI leader should be very helpful!

INTERDISCIPLINARY ASSIGNMENT FOR SPRING SEMESTER
The interdisciplinary assignment is the First Year Research Conference oral presentation. The grade on this presentation 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.

INDIVIDUAL LECTURE EXAMS
Please see the end of the syllabus for information on exams and exam dates.

RESOURCES REQUIRED FOR BIO 1407
- **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, close-heel shoes to enter the labs at any time.

- **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! 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.

  Laboratory Manual for Biology 1407, Spring 2011. All are available at the University Bookstore.

  All or part of the following chapters in the text will be covered in this course: 22, 23, 24, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 40, 41, 42, 44, 45, 46.

**UNIVERSITY AND CLASS POLICIES**

**Class attendance**
My attendance policy is the same as the University's. Please read the University’s attendance policy on page 33 in the 2007-2008 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 22 January and 2 April, you will be assigned a grade of W. Please be sure you read and understand the University’s drop policy found on page 32 of the catalog before you drop any class.

**Academic Honesty**
All students are expected to be familiar with TAMU-CC’s Academic Honesty Statement found on page 38 of the 2007-2008 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. 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
I will follow University policy should you miss an exam due to a University-related event or religious obligations. For students missing exams for other reasons such as family events or illness, please contact me.

EVALUATION OF STUDENTS IN THE DIFFERENT SECTIONS OF THE COURSE
- Evaluation of non-STEP, non-Honors, non-Triad students
Students in the standard learning community sections of the course are very strongly encouraged to attend SI sessions or come to my office hours for additional assistance with the course. Please see the schedules on Blackboard.

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<th>points</th>
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<tr>
<td>interdisciplinary assignment (presentation)</td>
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<tr>
<td>engaging in science</td>
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<tr>
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<tr>
<td>survey submission</td>
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Evaluation of students in the Triad section (15X) and specific assignments for Triad students
Triad students only! These are students in section 15X, the section without chemistry II.

Pre-exam reflection
On the Monday before exams, Triad students will submit a reflection to the appropriate drop box on Blackboard on what they have done to prepare for that week’s exam. Students will discuss the SI sessions they attended, how they prepared for the exam and list topics that they think will be asked about on the exam.

Post-exam reflection
On the Monday after exams, Triad students submit a reflection to the appropriate drop box on Blackboard on the previous week’s exam. Students will discuss if the exam asked questions similar to what they anticipated, particular questions they found to be difficult and the reasons why, and for all exams except the final exam discuss if they plan on doing anything differently to prepare for the next exam. For the reflection for the final exam, rather than discuss how to prepare for the next exam students will discuss their plans for the fall semester.

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Evaluation of STEP students and specific assignments for STEP students
-STEP students only! (Students in a STEP section of pre-calculus or calculus.) (this includes STEP students also in the Honors section of the course)
Students in the STEP program are very, very, very, very x10⁶ strongly encouraged to attend STEP mentoring sessions led by Caitlin Bailey and Mariela Rivera. Start attending STEP mentoring sessions well in advance of an upcoming exam. Waiting to start attending STEP mentoring sessions until just before an exam will be of very little help to you. Keep in mind that STEP mentors are mentors. They can be a great resource for information about core classes and instructors of those core classes and information about your future biology, chemistry or math courses. Mariela Rivera and Caitlin Bailey are the STEP mentors assigned to biology 1407. Please take advantage of their expertise. You should take advantage of the mentoring sessions regardless of your grade in the course. These sessions are not only for students doing poorly in the course. These sessions will be helpful to you if you are doing well, or not so well in the course. It is my experience that ALL students in the STEP sections will benefit from these sessions. Finally, for every bio 1406 exam for
all years of STEP, students attending sessions did better on the exam than did STEP students not
attending sessions. Attend and participate in sessions!

**STEP session schedule**
All sessions meet in the STEP room (CS 110). The late afternoon/early evening times were
unavoidable due to mentor schedules. There should be no class conflicts with these times. Please
note that the Wednesday session is between chemistry and biology classes. We hope most of these
times work with student schedules.
Monday 5:00 – 6:30
Tuesday 7:00-8:30
Wednesday 10:00-11:00
Thursday 7:00 – 8:00

**STEP student questions for the exam.**
On most Fridays (see the schedule below), students will submit a short answer or multiple choice
question they think will be on the exam and an answer to their question to the drop box on
Blackboard. If students opt to write a multiple choice question, they must explain why each choice
is correct or incorrect. This question will be about the material covered during the week. This
material for the week includes the material for that week’s team learning assignment.

Over the weekend, Caitlin, Mariela and I will read these questions. We read the questions and
assign points based on the quality of the question and the answer. No points for no answer! From
the questions we read, we each select three questions.

On Monday the nine questions we selected will be posted on Blackboard.

On Wednesday, students submit their answers to two of these nine questions to the drop box on
Blackboard. You may submit answers to these questions even if you did not submit a
question. Notice that if we select a question you wrote all you have to do to answer that question is
copy and paste your answer. That leaves you to write an answer to just one question. We read your
answers and assign points based on how well your answer answers the question. If IOL support can
get the comments feature on Blackboard to work correctly, we will be able to provide feedback on
your answers.

Questions will be due on 21 January, 28 January, 4 February (chemistry exam this day so take that
into account when planning when you will write your question), 18 February, 25 February, 11
March (chemistry exam on this day, answer to questions not due until 23 March), 25 March, 1
April, 15 April (chemistry exam on this date), 22 April, and 29 April.

There are 11 dates for these student questions. For each week a question is submitted, the question
submitted on Friday is worth 5 points and the answer to each of the two questions submitted on
Wednesday is worth 5 points. This is a total of 15 points for each week a question is submitted.
There are 165 points from these questions over the semester. We hope that this assignment
develops your ability to ask questions and helps you to better understand the material covered in
lecture each week.

learning community STEP and STEP and Honors

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<th>points</th>
<th>% of grade</th>
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individual exams 500 26.3
team learning exams 100 5.3
team learning assignments 300 15.8
daily in-class questions 150 7.9
CPR 100 5.3
interdisciplinary assignment (presentation) 100 5.3
engaging in science 20 1.1
Pi Day Challenge 15 0.8
survey submission 10 0.5
weekly exam questions 165 8.7
lab 440 23.2
total 1900 100

Non-STEP Honors students only!
This part of the syllabus may change after the meeting on 11 January to determine details about the Honors section interdisciplinary assignment.

Students in the Honors program are very strongly encouraged to attend Becca’s sessions.

Weekly summary
Non-STEP Honors students will submit a weekly summary to the appropriate drop box on Blackboard. For non-exam weeks you will summarize the material covered during the week and write a question with an answer you think will be on the exam. For exam weeks, you will summarize what you did to prepare for the exam, discuss a question you thought was a difficult question on the exam, and state what you are going to do differently, if anything, to prepare for the next exam. Each summary is 8 points.

Honors (non-STEP only)

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Assignment of course grades, all sections.
Grades for students in all sections of the course will be assigned as follows:

A= 89.5-100 % of the total points
B= 79.5-89.4 % of the total points
C= 69.5-79.4 % of the total points
D= 59.5-69.4 % of the 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.

**Exams, all sections**

There are a total of five individual exams (three individual exams given during a lecture period and a two part 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 fourth individual exam). The second 100 points of the final covers material from the first three blocks of material. 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.

I do not assign a curve to each exam. **THERE IS NO EXTRA CREDIT!** For dates of the exams, CPR assignments and due dates for the team learning assignments, please see the calendar on Blackboard.

**Exam dates for all sections are Friday 10 February, Friday 3 March, Friday 7 April.**

**The final exam is Friday, 5 May 11:00 to 13:30**

**ALL students MUST take the final exam at the assigned time.**