BIO 2: CELLS, MOLECULES, AND GENES

COURSE INFORMATION:

Instructor: Dr. Kelly McDonald
Office: Humboldt 211C, 916-278-5836
Email: Please email me through SacCT

Office Hours: Wednesday 2:00-3:30 pm
Thursday 3:00-4:30 pm
Location of office hours: Sequoia 339

Lecture: Monday/Wednesday 4:30-5:45pm, Del Norte, DLN 1010 (section 01)

Laboratory: Monday, 1:00-3:50, Sequoia 208 (section 02) – Ms. Carper
Wednesday, 9:00am-11:50 am, Sequoia 208 (section 03) – Ms. Chang

Activity: Thursday, 10:30am-12:20pm, Humboldt 116 (section 06)
Thursday, 1:00pm-2:50pm, Humboldt 116 (section 07)

Text: Campbell, N.A., Reece, J.B., Urry, L.A., Cain, M.L., Wasserman, S.A., Minorsky, P.V., and Jackson, R.B. Biology. Ninth edition. San Francisco, CA. Pearson, Benjamin Cummins Publishing. 2011. ISBN-10: 0321558235 and ISBN-13: 9780321558237.

Mastering Bio: The course code is MCDONALDBIO2SPRING2013

Lab Manual: You are responsible for purchasing your laboratory package from the CSUS bookstore before Week 2. Additional materials may be distributed through SacCT.

Required for Lab: Lab fee; Laboratory notebook (with stitched or glued binding; no carbon copies)

Course Websites:

- All course materials (except lab package) and communication outside of class will be disseminated via SacCT. **Please get in the habit of checking SacCT for emails and announcements on a regular basis.**

- You will also be using the Mastering Biology website (http://www.masteringbiology.com/) that accompanies the text. Access codes are provided with your text. If you've purchased a used text, you can still purchase an access code. Your course code for Mastering Biology is shown above. There is an optional Introductory lesson that might be helpful if you are new to Mastering Biology. In addition, I have a faculty website at http://www.csus.edu/faculty/m/mcdonald/

- I like to use technology in my class, so please be aware that the Student Technology Center (STC) in AIRC room 3007 can help you with technology issues if I am unavailable. If the use of technology in my class is going to present a problem for you, please see me at the beginning of the semester!

Prerequisites:

BIO 1 and CHEM 1A (or equivalent courses). You will need to show evidence **in the first week of class** that you have completed BIO 1 and CHEM 1A with a passing grade (or the equivalent courses at another institution). Please print your unofficial transcripts and highlight the relevant courses. Exceptions are made in some cases, but you need to contact me right away to discuss your situation.

Catalog Description:

BIO 2. Cells, Molecules, and Genes. Introduction to molecular and cellular biology and genetics. Topics include biomolecules, cell structure and function, cellular energetics, molecular flow of information, cell division, and genetic inheritance. Development of scientific skills and a scientific mindset will be emphasized throughout the course, particularly in lab exercises and activities. Designed for science majors. Lecture three hours, laboratory three hours, activity 2 hours. Prerequisites: BIO 1 and CHEM 1A. 5 units.

EXPECTED LEARNING OUTCOMES:

The curriculum in this course is aligned with the following department-adopted learning outcomes:

- Students will develop a base of factual and conceptual knowledge of basic and applied biological processes.
- Students will be able to generate and communicate scientific knowledge.
- Students will develop and appreciate the importance of connections between other academic disciplines and the biological sciences and the social relevance of biology.
- Students will be able to implement the skills needed to be life-long learners in any field of study.

In addition:

- Students will be able to identify and apply information and analyze data in order to solve problems.
- Students will develop skills and appreciate the importance of collaborating with the instructor, learning assistants and classmates in solving problems
- Key Concepts and specific Student Learning Objectives for all units (organized by chapter) will be posted on SacCT. These will also serve as a study guides for exams.

COURSE POLICIES:

I. Evaluation of student performance

This course has three components (lecture, lab and activity) and your grade will be based upon your performance across all three portions of the course.

A. Attendance

Attendance is required for all three components of the course and will factor into your grade. I do understand that there are times that you must miss a class due to illness, family emergencies, etc. If you must miss an exam or graded activity, you must contact me or your instructor in advance or as soon as possible to discuss make-up opportunities. It is **your** responsibility to actively communicate with your instructor to make-up missed assignments. In general, late assignments will receive 50% credit if

turned in at the next class period following an unexcused absence. There will NOT be make-up opportunities for some in class assignments and activities.

B. Lecture

There will be four lecture exams worth 100 points each. After the first three exams, there will be an exam review assignment in which you will correct the questions you missed and reflect on your learning. In addition, there is a pre-assignment for every lecture. These will be randomly collected and graded, but all will serve to prepare you for the in-class activity for that day. These assignments are on your schedule (as "PA" followed by a number), will be distributed in class and/or delivered via SacCT. Class time will be devoted to group and individual activities designed to help you learn the more difficult concepts and practice solving problems. You will not *usually* be able to make up in-class exercises if you miss class, but it is your responsibility to find out what you missed as this material will help you on the exams.

Lecture exams (4) ----------400 pts
Exam review/correction (3) ----------30 pts
Mastering Biology/online assignments (12) -------- ~80 pts
In-class activities and homework (TBA)--- approx. ~90 pts
Lecture total---------- ~660 pts (~66% of grade)

To be successful in this class, I **STRONGLY ENCOURAGE** you to do the pre-assignments. I will post PowerPoint slides before class to guide your reading and studying; however, a large part of my "lecture" time is actually "lecture-free." We will use much of class time to work independently or in groups to solve problems, examine case studies and discuss the more challenging concepts covered in your text. I will not be lecturing over all of the material that you are responsible for learning, but rather, will select the more difficult concepts to work on in class. If you come unprepared, you will not be able to contribute to group activities or discussions. I will provide you with the tools, but you will be responsible for your own learning and for seeking my help when needed. I will make every attempt to help those that seek my assistance!

A little tip: It generally takes THREE times viewing the same material for it to really sink in – therefore, the best strategy is 1) to complete the pre-class assignments, 2) to come to class and actively participate (take notes, ask questions and take part in activitities and discussions), and 3) to review your notes or use additional Mastering Biology activities for content review within 24 hrs of the class.

C. Laboratory

Developing good laboratory skills is critical for a biologist, therefore lab is a very important component of this course. Three missed labs will result in failure in the course. You are required to maintain a laboratory notebook, which will be graded at the instructor's discretion, so keeping your work up-to-date is important. There will be two open notebook exams, which is another reason to keep a thorough and thoughtful notebook. If you miss a lab that is part of a multi-week experiment, you may use your partners' data; however, you must clearly indicate that you did not attend and give credit to the individuals that generated the data. You **MUST** read and attempt to understand the activities prior to coming to lab. Certain labs have pre-lab exercises or questions that you need to complete before lab.

Lab Attendance ---------- 15 pts
Lab notebook ---------- 65 pts
Lab Midterm ---------- 60 pts
Lab Final ---------- 60 pts
Laboratory total---------- 200 pts (20% of grade)

D. Activity

Attendance in Activity is also very important, as we will be exploring topics from lecture in more depth through hands-on activities, discussions, case studies, role playing, etc. This part of the course is designed to reinforce important concepts from lecture, as well as help you develop specific skill sets important for many careers in the life sciences (e.g., critical thinking and communication skills, ability to use certain scientific software and database tools). The required preparation will vary from week to week and will be communicated through your Class Schedule and/or via SacCT. Pre-assignments will be worth 5-20 points – all graded assignments will be due at the beginning of your activity period. Some of the activities can be made-up with alternate assignments if you miss class, but you must contact me in advance or as soon as possible. If the activity cannot be made up, you will only be given an alternative assignment if your absence is excused. There will be an ongoing project (Genes and Disease) that will involve independent research and culminate in a poster presentation. This project will count for x% of your activity grade, so please allot enough time to work on this project.

Pre-assignment and Participation ---------- 125 pts
Final Poster Presentation ---------- 75 pts
Activity total ----------200 pts (20% of grade)

E. Course Grade

Course Points:
Lecture ---------- 600 pts
Laboratory ---------- 200 pts
Activity ---------- 200 pts
Course Total (approximately)-------- 1,000 pts

Extra Credit: There will opportunities to earn extra credit semester, but no more than 10 points of EC will be awarded to any one student.

Grade assignment is based on a percentage of total points earned. The following grading scale will be used to determine final grades.

A = 90-100% of total points
B = 80-89% of total points
C = 70-79% of total points
D = 60-69% of total points
F = < 60% of total points

Borderline grades *may* be adjusted upward as determined by other factors, including improvement and evidence of mastery of the material in class. A borderline score is defined as the intervals 89-90%, 79-80%, 69-70%, and 59-60% of total points. **Minuses and pluses will also be awarded, but the scale will be determined after all grades are calculated.**

II. Course Policies

Classroom Etiquette

- Please arrive on time. If you must enter late, please do so quietly so as not to disrupt the class. Announcements and instructions are given at the beginning of class, so you are responsible for finding out what you missed if you are late. Habitual tardiness may result in points deducted from your grade in lab and activity.
- Please turn off and put away cell phones before class starts. There will be times when it is appropriate to use handheld devices, but only for class work (no texting, Facebook checking, emailing, etc., please). This is common courtesy to your peers and me. I, too, will refrain from checking email, updating my Facebook page, tweeting and texting my friends while class is in session.
- Laptops may be used for class work ONLY and there will be instances in which they will not be allowed (ex., during exams or some group activities), so please bring pen/pencil and paper to each class. The use of laptops may be distracting to some students, so please be sensitive to this.

Policies on Academic Misconduct

PLEASE READ CAREFULLY – Every semester, regardless of warnings, Bio 2 students have received zeros on major assignments, often affecting their overall grades, due to academic misconduct. Some were additionally reported to student affairs.

Cheating or any type of improper communication between students during an exam or quiz is considered ***inappropriate academic conduct*** and will not be tolerated. Students who fail to comply will, at minimum, be given a zero for that test. If there is specific evidence of cheating, the incident will be reported to the Biology Department Chair and the Dean of Students, and the student will receive an "F" for the course. Cheating on any type of exam or quiz, regardless of the point value, is considered to be an egregious offense to the academic honesty of this course, and thus warrants an "F" grade.

Plagiarism is a form of cheating *whether intended or not*. Plagiarism is defined as taking another's ideas or words as one's own. If you use another person's ideas or words, you must give them credit (that is, reference them) and not pass them off as your own. If you use someone's exact language, you must quote the passage and cite the author; if you paraphrase the ideas into your own words, you must still specifically cite the source from which you obtained the material. If in doubt, please ask!! Plagiarism is considered to be ***inappropriate academic conduct***, and is subject to the same disciplinary actions outlined above for cheating. In other words, if you plagiarize, at minimum you will receive a "zero" for the assignment, and the incident may, at the discretion of the instructor, be reported to the Biology Department Chair and the Dean of Students. If, in the opinion of the instructor, the plagiarism is intentional, this is considered to be an egregious offense against academic honesty that warrants the assignment of both an F grade in the course and the referral of the student to the Dean of Students for evaluation. This will occur regardless of the point value of the written assignment. I urge you to take this warning seriously. Please note that the class textbook, although used extensively, is still a reference, and must be cited accordingly. Websites or other sources of information must be used carefully, both to ensure

their accuracy and the extent to which they provide language for your assignments. ALWAYS take information from sources and integrate them with your own thoughts before writing your answers. Then, cite accordingly. Plagiarism at CSUS has been defined, in part, as

> "The act of incorporating into one's own work the ideas, words, sentences, paragraphs, or parts thereof, or the specific substance of another's work without giving appropriate credit thereby representing the product as entirely one's own. Examples include not only word-for-word copying, but also the "mosaic" (i.e. interspersing a few of one's own words while, in essence, copying another's work), the paraphrase (i.e. rewriting another's work while still using the other's fundamental idea or theory); fabrication (i.e. inventing or counterfeiting sources), ghost-writing (i.e. submitting another's work as one's own) and failure to include quotation marks on material that is otherwise acknowledged" (CSUS Memorandum PM 90-04; January 15, 2004)

Science as a discipline has its foundation in truthful work, and as a student of science, it is expected that you uphold this standard. When in doubt, cite your source. But remember that you should be writing down your original thoughts and ideas as they relate to your sources. A series of quotes, while legal, is not your work!
As mentioned, even though group data collection and discussion is encouraged in the laboratory and activity, all laboratory assignments are INDIVIDUAL assignments. You may consult with your lab partners, but are expected to present and analyze data yourself. For example, you must make your own graphs, tables, etc. and must discuss results in your own words. Failure to complete individual work in lab/activity will be considered ***inappropriate academic conduct***, and is subject to the same disciplinary actions outlined above for cheating. If in doubt about any of these issues, please ask your instructor!!

Actions that will be considered cheating include, but are not limited to:

1. Communication between students during an exam or quiz.
2. Copying another student's work.
3. Having written materials other than exam papers out during an exam or quiz.
4. Providing answers to another student during exams or quizzes.
5. Plagiarizing essays or other written activities.
6. Presenting falsified data.

III. University Policies

Reasonable Accommodation Policy

If you have a disability and require accommodations, you need to provide disability documentation to Services for Students with Disabilities (SSWD). For more information please visit the SSWD website (http://www.csus.edu/sswd/). They are located in Lassen Hall 1008 and can be contacted by phone at (916) 278-6955 (Voice) (916) 278-7239 (TDD only) or via email at sswd@csus.edu. You can discuss your accommodation needs with me after class or during my office hours early in the semester.

Academic Honesty

The University policy on academic honesty can be reviewed at the following web link: http://www.csus.edu/umanual/student/UMA00150.htm. **If you have never read this policy, please take the time to do so because it will help you avoid inadvertently engaging in plagiarism or other forms of academic dishonesty in all of your classes, not just this one.**

IV. Adding and Dropping the Course (subject to change)

- **During the first two weeks all adds in all courses** in the Department of Biological Sciences are completed by the instructor (not through MySacState).
- **During the first two weeks, the course may be dropped** using MySacState.
- **Drops after the second week** require serious and compelling reasons (includes medical issues, excessive course load, significant career or job changes).
- **During weeks three and four** an add/drop form (available in the department office) must be signed by the instructor and the chair and processed in the department office.
- **After the 4th week,** a white generic University Add/Drop form is necessary. This form requires the instructor's, chair's and dean's signatures and is processed in Admissions and Records. Drops after the 4th week will result in a W on your transcript for the course.
- **The last day to drop is the end of the 6th week.**
- **After the 6th week** all drops require approval of the instructor, department chair and dean. Drops during this period must be for career-related or medical reasons beyond control of the student and must be verified in writing by a doctor or employer.
- **No drops are allowed during the last week of instruction.**
- Please remember **there is no such thing as an automatic drop**. You are responsible for entering the drop on either on MySacState or by petition. Failure to do this could result in a grade of "WU" or "F".