TEXAS A&M UNIVERSITY-CORPUS CHRISTI
BIOL 2416: GENETICS
SUMMER I 2015 SYLLABUS

Instructor: Xavier F. Gonzales, PhD, MSPH
Office: Engineering 310C
Office Hours: Monday: 9:00 am – 11:50 am
Tuesday – Thursday: 8:00 am - 8:50 am
Other times: by appointment only.
Lecture Hours: Monday - Thursdays 12:00 pm - 1:50 pm
(be courteous if you enter tardy)
Break from 1:00 pm – 1:15 pm
Recitation Hours: Monday – Thursday 2:00 pm – 3:25 pm

COURSE DESCRIPTION
This course introduces students to the basic principles of inheritance and expression of genetic information. Current topics in and applications of molecular genetics are briefly covered as well. Emphasis will be placed on critical thinking and problem solving in the context of inheritance and the molecular basis of heredity.

The recitation period is designed for discussion, idea exchange, and active learning activities to reinforce lecture material. Emphasis will be placed on problem-solving activities, critical thinking skills for data analysis and collaborative learning.

STUDENT LEARNING OUTCOMES:
Upon completion of this course, the student will have a good understanding, and will be able to:
1. Mendelian inheritance and its extensions, including basic quantitative genetics
2. The connection between mitosis, meiosis, and Mendelian Genetics
3. Non-Mendelian inheritance
4. Linkage, recombination and chromosome mapping
5. Chromosome number and structure
6. DNA structure and replication
7. Transcription and RNA processing
8. The genetic code, translation, and protein structure
9. Basic mechanisms of regulation of gene expression
10. The connections between Mendelian and molecular genetics
11. Basics of recombinant DNA technology, genomics, and other new fields within genetics
12. Genetics of populations including Hardy-Weinberg equilibrium and evolution
13. The use, calculation, and interpretation of the $\chi^2$ tests in Genetics

REQUIRED TEXT
Ed. Access to the textbook Connect site must be purchased
- Note that the listed chapters are as written in the 5th edition of the text
FURTHER READINGS

- Primary literature as directed by instructor: student will be responsible for obtaining the assigned reading from the library or online database
- Instructor reserves the right to utilize other source materials to enhance the lecture material: student will be responsible for getting this information from the lecture

Supplies/materials required: Textbook, calculator, recitation notebook (scantrons when indicated)

REQUIRED UNIVERSITY POLICIES

Students with Disabilities and Veterans: All programs in Life Sciences (LSCI) comply with the federal Americans with Disabilities Act (ADA) of 1990, including the ADA Amendments from 2008 (PL 110-325). This anti-discrimination statute provides civil rights protection for persons with disabilities. This statute requires that all qualified students with disabilities be guaranteed a learning environment that provides reasonable accommodations of their disabilities. This act also includes returning veterans who may be experiencing cognitive, emotional and/or physical access issues in the classroom or on campus. If you are a returning veteran or you suspect that you may have a disability requiring accommodation, please contact the Office of Disability Services (located in Driftwood 101) at (361) 825-5816. Please contact this office in a timely manner, as they must review requests and prepare accommodations and send the accommodation letters.

If you need disability accommodations in this class, please contact the instructor as soon as possible. If you have mobility problems, are pregnant, or you may have a history of seizures, please notify the instructor PRIVATELY so that assistance can be given in case of fire drills or emergencies. Please have your Faculty Notification Letter from the Disabilities Service Office when you talk with the Instructor.

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 on 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 on the process, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, consult Texas A&M University-Corpus Christi University Procedure 13.02.99.C2.01 Student Grade Appeal Procedures (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 or the College of Science and Engineering Dean’s Office.

Academic Advising: The College of Science and 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. The College's Academic Advising Center is located in Center for Instruction--Suite 350, and can be reached at (361) 825-3928.

CLASS POLICIES

Attendance: Students are expected to attend every scheduled class and recitation meeting. It is the responsibility of the student to obtain any material missed during an absence from his/her classmates. Power Points are not placed in the library, and only Power Points from certain sections will be placed on Blackboard™ 9.1, or on a website.
Academic Integrity: TAMUCC academic policies are in force, including standards for academic integrity & honesty, plagiarism, grammar and spelling. All policies are described in the TAMUCC catalogue and the Code of Conduct in the Student Handbook.

DO NOT SHARE WRITTEN INFORMATION BETWEEN PARTNERS ON LAB REPORTS, AND PLACE THIS IN YOUR LAB NOTEBOOKS! THIS IS PLAGIARISM, AND YOUR TA WILL AWARD ALL OFFENDING PARTIES A ZERO ON THE ASSIGNMENT! We also have to report all instances of cheating to the Dean of Students office on an Academic Misconduct form.

Citation format: Please use Council of Science Editors format. If you don’t know this, ask someone in Pro Skills! A useful link on this format is available at this URL:

Professional Courtesy: DO NOT USE CAMERA PHONES IN LECTURE OR LAB. DO NOT SEND TEXT MESSAGES DURING CLASS. Please turn off all cell phones, beepers, Bluetooth devices, Palm Pilots, Black Berrys, etc., before entering the classroom or laboratory, or at least place them on silent mode. I would prefer that earpieces not be worn in lecture or laboratory. DO NOT TAKE PHOTOS of Power Point slides or videos with your cell phone camera unless otherwise instructed. Recording of lectures with tape recorders can only be done with permission of instructor.

Classroom 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 (including excessive text messaging) may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.”

List-serve: All students are on the Blackboard list serve for the course, and to a second opportunities-list serve.
To subscribe, send a separate e-mail to opportunities-list-request@sci.tamucc.edu. Make sure that your e-mail appears in the “From” heading. In the subject heading, type “subscribe,” then send the e-mail. Next, you will receive a second message with a long set of letters and numbers in the subject line. You must also reply to that message in order to be subscribed to the list-serve.

After the initial message to subscribe, to send items on the list-serve, just type opportunities-list@sci.tamucc.edu (do NOT add –request after list). You may not receive the messages from the list-serve if your Internet service provider (Yahoo, Hotmail, Excite, Roadrunner, Grande, etc.) keep these messages from being placed in junk-mail. The University administration prefers that you use the islander.tamucc.edu accounts.

At the end of the course, send an e-mail that contains your e-mail address in the “From” heading to opportunities-list@sci.tamucc.edu. In the subject heading, type the word “unsubscribe,” then send the e-mail. I hope that students will continue to subscribe to opportunities-list@sci.tamucc.edu!

Dropping courses: I hope that students do not find it necessary to drop this 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. You as adults have to be the final judge of your action whether to drop or not. For students applying to professional or graduate school, you will have to explain why you dropped this class or any other class. Receiving a “W” is NOT automatic; you must initiate the paperwork in the Student Services Center (the “Round Building”). Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class.

Deadline to drop course with a “W” grade: June 19
Deadline to withdraw from University for the summer I term: June 30th

Nature of Assignments:

Team Learning: We will use a team learning approach in this class. Permanent groups will be established at the start of the course. 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 in groups. Sometimes each group member will submit answers individually and sometimes groups will submit group consensus answers to questions. We will use the team learning approach on in-class recitation assignments and lecture exams as described below.

Exams will be comprised mainly of multiple choice questions. Some may be setup as matching or fill-in the blank. Problems and/or essay questions may appear on the exams. Most questions, including multiple choice questions typically require analysis and interpretation of data or experimental design to assess critical thinking skills. You should bring a calculator to every exam. The Final Exam (Thursday, July 3) will consist of approximately 25 pts new material and 175 pts comprehensive review of entire course content. Cell phones must be turned off and put away during exams.

For the first two exams, students will INDIVIDUALLY take the exam during the first half of the class period. This score will constitute 80% of your 125 point exam score (100 points). The other 25 points of your exam score will be from a GROUP exam. Without using any outside resources during the group portion of the exam or between the individual and group portions of the exam, your group will answer the same exam questions. Each group must reach a consensus on each question and submit a single set of answers for the whole group. There is no group component on the final exam.

I may allow students to use one sheet of handwritten notes on the cumulative final exam. This is not a right, but a privilege which must be earned and may be taken away by the instructor at any time. Only the front and back of a single 8.5” x 11” page with no typing, photocopying or computer generated information of any kind will be allowed. If at any time during the semester you engage in academic dishonesty on any assignment, you will forfeit this privilege for the rest of the term. This includes cheating, helping others to cheat, and even failure to report the dishonest actions of others.

Recitation Assignments will vary depending on the activity conducted each week. All activities will involve group work. Groups will be assigned at the beginning of the semester after the first recitation. Most weeks you will work on an activity as a group; however, you will complete and turn in most written assignments individually (unless otherwise specified) using your own words. Assignments may involve solving problems, data analysis, explaining concepts, or other hands-on applications of the concepts being covered in lecture. Occasionally we will cover a concept in recitation before it is covered in lecture, and some topics will be covered only in lecture or recitation, but not both.

The majority of the credit for recitation will be gained in development of active-learning activities to explain assigned topics to peers.
Homework will be assigned at the instructors discretion and will be due BY the BEGINNING of LECTURE the NEXT DAY. You must be present to submit the homework for credit. I will not accept homework via email or allow someone else to drop off your work for you. Assignments will vary from day to day but will tie into that day’s lecture and recitation activities. You are encouraged to get together and work on problem-solving as a group. However, all assignments must be turned in individually (unless specified otherwise) and be written in your own words, NOT COPIED from someone else. The daily homework consists of completion of all even numbered Conceptual & Experimental Questions at the end of the assigned chapters.

Quizzes will be given at the instructor’s discretion. Quizzes may be multiple choice or short answer, primarily evaluating your mastery of the previous day’s material (lecture, recitation and homework). Quizzes must be completed individually, with no assistance from peers, notes or aids of any kind. Quizzes will be available through the textbook Connect site. Students must purchase access. For every chapter that is covered in the syllabus the student must complete the online quizzes and exercises that are available for that chapter. To receive credit the student must hand in a copy of all the questions and answers from each quiz and explain the outcome of each exercise. Students will receive 4 pts for each completed chapters course content. Each extra credit is due the day that Homework is turned in for that chapter. Extra credit will only be given for the chapters in which Homework was assigned. Total extra credit: 48 pts.

GRADED ACTIVITIES—Evaluation
Grading scale: A≥90%  B=80-89.9%  C=70-79.9%  D=60-69%  F<60%

Lecture/Recitation
2 class Individual Exams @ 100 pts. Each = 200 pts max
2 class Group Exams @ 25 pts. Each = 50 pts max
Cumulative final exam = 200 pts
Recitation assignments/participation/Homework = 250 pts
Quizzes = 100 pts max)

Extra credit assignments = 30 pts max
(given at prerogative of instructor; no alternatives)

Missed exams—No make-up exams will be given, one exam can be dropped and replaced by the grade from the Cumulative Final Exam.

Missed extra credit opportunities—Instructor is not obligated to give make-up assignments for extra credit opportunities, whether excused or unexcused.

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 recitation periods, but no attempt will be made to contact students who were absent when an announcement was made. Nevertheless, all students are responsible for abiding by all announced changes, and it is a student’s responsibility to obtain this information. Changes will be announced in a timely manner, but be aware that some modifications may be implemented without prior warning.
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<th>Date</th>
<th>Lecture Topic</th>
<th>Reading</th>
<th>HW Due</th>
<th>Quiz</th>
<th>Recitation Topic</th>
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<tr>
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<td>Introduction to Genetics</td>
<td>Ch 1</td>
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<td>Online Blog Discussion</td>
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<td>06/02</td>
<td>Mendelian Inheritance I</td>
<td>Ch 2</td>
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<td>06/03</td>
<td>Probability</td>
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<td>Ch 4</td>
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<td>06/09</td>
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<td>Chromosomal Organization</td>
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<td>06/22</td>
<td>Central Dogma in Inheritance: II</td>
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<td>Regulation of Gene Expression: I</td>
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<td>Ch 13</td>
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<td>Transcription &amp; Translation: Internal</td>
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<td>Gene Mutation &amp; DNA Repair: Internal Only</td>
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<td>07/01</td>
<td>Ethics Discussion</td>
<td>Ch 18</td>
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<tr>
<td>07/02</td>
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