BSC 304.01W: Genetics - Fall 2020

Web Based Course

Instructor Information:
Bjorn Schmidt
Office: STC 212
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Preferred contact: email
Virtual office hours: Fridays 1pm-2pm, or by appointment

Textbook and materials
Genetics, Analysis & Principles. 6th edition, Brooker, Robert J. ISBN: 978-1259616020
Access to a computer and d2l (myleo online) is required; all course materials will be uploaded through d2l

Course Description
This course is for biology and pre-professional majors with a good understanding of general biology and general chemistry. The course will provide a rigorous foundation of principles of genetics that act at the molecular, organismal, and population levels, including in humans. Topics will range from Mendelian and non-Mendelian mechanisms of inheritance, the molecular structure of DNA and chromosomes, DNA replication, gene transcription, mRNA translation, gene regulation, molecular technologies, genomics, and population genetics.

Prerequisites: BSC 1406, BSC 1407, and Chem 1311, with minimum grade of C

Student Learning Outcomes
- Students will be able to conceptualize and solve problems involving principles of Mendelian genetic inheritance
- Students will understand how genetic information for biological functions is structured and replicated in DNA and chromosomes
- Students will be able to describe gene transcription and mRNA translation leading to proteins influencing biological characteristics and functions
- Students will understand how variability is introduced into the genetic code through DNA mutations and recombination

- Students will be able to understand theory and applications of commonly used genetic molecular techniques and analyses including genomics and population genetics

Laboratory
Students are **required** to be enrolled in the BSC 304LW course which will reinforce content covered in the BSC 304. The laboratory component will include virtual modules that use equipment that is commonly used in a molecular genetics laboratory. The grade for the laboratory component will contribute to **25%** of your final grade for the course. Labs will begin the second week of class, and students will need to follow all rules and schedule of the lab syllabus provided in BSC 304LW.

Course Materials and Online Presentation
All course materials will be presented through d2l. The class format will be asynchronous, with course lecture videos being posted each week. The corresponding powerpoint slides used in the videos will also be uploaded to d2l. The schedule for topics covered in the course is presented later in the syllabus. Students should read the corresponding chapters in the text book that are marked in the schedule of topics. Synchronous virtual office hours for the course will be held every Friday at 1pm-2pm. These will be opportunities for asking questions about the course or topics covered in the course. If your schedule prevents you from attending these virtual office hours, then appointments can be made for alternate office hour times through email. There will be weekly quizzes posted on d2l each Friday after the office hours (2:30 pm) and exams will be posted through d2l (dates will be marked in the schedule and announcements beforehand will be made in d2l). Exams and quizzes will have a one week deadline for completion; extensions will be handled on a case-by-case basis through email.

Course Evaluations
Tests: There will be three term exams posted on specific Fridays on d2l and a comprehensive final exam scheduled during finals week. Material for the final exam will be 50% new material that was covered after exam 3 and 50% comprehensive material that was covered on exams 1-3.
Quizzes: There will be 11 quizzes posted on Fridays on d2l (weeks that have an exam will not have quizzes). Each quiz will be worth 20 points, and you will get to drop your lowest quiz for the semester

Grading
A: 89.96-100%
B: 79.96-89.95%
C: 69.96-79.95%
D: 59.96-69.95%
F: <59.96%

Evaluation Points
3 Exams - 300 points (100 points each)
Final Comprehensive Exam - 100 points

11 weekly quizzes (lowest score dropped) - 200 points (20 points each)
Laboratory grade - 200 points

Total points = 800

Online Attendance: You are expected to keep up with all of the online course materials provided each week. The goal of the weekly quizzes is to help students maintain a proper learning pace for the material to ensure they are ready for the tests. Attendance will be assessed each week through completion of the weekly quizzes or exams. If your circumstances change this semester for university excused reasons and you find that you are unable to maintain the weekly content schedule, please contact me through email as soon as possible to discuss alternative solutions.

General Makeup Policy: The student is responsible for requesting a makeup when they are unable to submit the regularly scheduled assessment before the due date and must schedule the makeup within **5 days** after the due date. If the assessment is not made-up, the student will receive a zero for that item.

Syllabus Change Policy
The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

Technology Requirements
Material will be regularly posted on the D2L online system (available from myLeo app). You will need to have access to this online system using your cwid. Help connecting to this class in the system can be retrieved from the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu. You will need to periodically check this online system and your university email account for class messages.

Course Schedule (subject to change during the semester)

- videos and lecture slides for the corresponding week's material will be published on d2l on Mondays
- Quizzes and exams will be posted at 2:30 pm on Fridays under the quizzes tab in d2l
- Quizzes and exams will have a deadline of roughly one week later; in general the deadline will be the following Thursday before 11:59 pm
- virtual office hours will be held each Friday from 1-2pm (allowing questions about that week's worksheets, review sessions for exams, etc.), if no students attend by 1:20 pm, these virtual sessions will be closed for that day; alternative office hours for specific questions can be scheduled by appointment or questions can be answered through email

Tentative Course Schedule (subject to change)

Week of	Topics (Book Chapters)	Due Date (quiz or exam)
8/24	Mon: Syllabus/Welcome Introduction to Genetics (Ch. 1) Basic Mendelian Inheritance (Ch. 2) **Fri - Quiz 1**	**9/3 11:59 pm**
8/31	Mon: Basic Mendelian Inheritance (Ch. 2) Cell Division & Sexual Reproduction (Ch. 3) **Fri - Quiz 2**	**9/10 11:59 pm**
9/7	Tue: Extensions of Mendelian Inheritance (Ch. 4) Non-Mendelian Inheritance (Ch. 5) **Fri - Quiz 3**	**9/17 11:59 pm**
9/14	Mon: Non - Mendelian Inheritance (Ch. 5) Gene Linkage & Gene Mapping (Ch. 6) **Fri - Exam #1 (covers topics from Chs 1-6)**	**9/24 11:59 pm**
9/21	Mon: Molecular structure of DNA/RNA (Ch. 9) **Fri - Quiz 4**	**10/1 11:59 pm**
9/28	Mon: Chromosome Structure (Ch. 10) DNA Replication (Ch. 11) **Fri - Quiz 5**	**10/8 11:59 pm**
10/5	Mon: DNA Replication (Ch. 11) **Fri - Exam #2 (covers topics from Chs 9-11)**	**10/15 11:59 pm**
10/12	Mon: Gene Transcription & RNA Modification (Ch. 12) Translation of mRNA (Ch. 13) **Fri - Quiz 6**	**10/22 11:59 pm**
10/19	Mon: Translation of mRNA (Ch. 13) Gene Regulation I (Ch. 15) **Fri - Quiz 7**	**10/29 11:59 pm**
10/26	Mon: Gene Regulation I (Ch. 15) Gene Regulation II (Ch. 16) **Fri - Quiz 8**	**10/29 11:59 pm**
11/2	Mon: Gene Mutation, DNA Repair, & Recombination (Ch. 19) **Fri - Exam #3 (covers topics from Chs 12,13,15,16,19)**	**11/05 11:59 pm**
11/9	Mon: Molecular Technologies (Ch. 20) **Fri - Quiz 9**	**11/12 11:59 pm**
11/16	Mon: Genomics I (Ch. 22) **Fri - Quiz 10**	**11/19 11:59 pm**
11/23	Mon: Genomics II (Ch. 23) **Thanksgiving break (no Fri quiz/exam)**	
11/30	Mon: Population Genetics (Ch. 27) **Fri - Quiz 11**	**12/10 11:59 pm**

12/7	**Final Exam - Available Monday, Dec 7: after 9 am; available on d2l until Friday Dec 11 at 11:59 pm** **50% material covered on Exams 1-3, 50% material after Exam 3 (Chs 20, 22, 23, 27)**	**12/11 11:59 pm**

University Specific Procedures

Student Conduct
All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook.
http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: Netiquette
http://www.albion.com/netiquette/corerules.html

TAMUC Attendance
For more information about the attendance policy please visit the Attendance webpage and Procedure 13.99.99.R0.01.
http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf

Academic Integrity
Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

Undergraduate Academic Dishonesty 13.99.99.R0.03

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf

Graduate Student Academic Dishonesty 13.99.99.R0.10

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf

ADA Statement

Students with Disabilities

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 have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce
Gee Library- Room 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: studentdisabilityservices@tamuc.edu

Website: Office of Student Disability Resources and Services

http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the Carrying Concealed Handguns On Campus document and/or consult your event organizer.

Web url:
http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.