BSC 513 Genetic Analysis (CRN: 50242)
Summer II, 2013
Prerequisites: An undergraduate degree in Biology or related discipline, or permission from instructor.

Instructor:	**Dr. Venu Cheriyath**
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eCompanion Site:	eCollege @ MyLeo
Lectures:	**On-Line**
Office Hours:	Thursday & Friday, 1 - 3 PM, or by appointment (include BSC 513, Genetic Analysis in subject line)

Course Overview: This course is designed for students who have taken introductory genetics and have a general familiarity with cell and molecular biology. Therefore, this course provides students with an in-depth investigation into DNA technology and practical application of genetic study. Emphasis will be placed on eukaryotic gene mapping, gene functional studies and on genomics, and its practical applications. Students are expected to gain an in-depth understanding of analysis, strategy and experimental logic used in deriving the basic principles and concepts of genetics at the molecular level.

Student Learning Outcomes (SLO)
At the end of this course students will be able to:
1. Describe the development of gene concept.
2. Understand genome databases of various model organisms.
3. Discuss the principles of genetic screens using mutants.
4. Understand methods to analyze gene mapping and cloning of genes.
5. Describe methods to assess gene activity.

Required Reading:
Advanced Genetic Analysis, Genes, genomes and networks in eukaryotes, by Philip Meneely, **ISBN: 9780199219827**

Supplemental Reading:
GENETICS: Analysis and Principles, 4th edition, by Robert J. Brooker, ISBN-13: 978-0077474904 (with connectplus access); ISBN-10: 0073525286 or ISBN-13: 978-0073525280 (without connectplus access)
While this is a text book recommended at undergraduate level, reviewing this book may help you to understand basic concepts and problems in genetics.

INSTRUCTION METHOD

Web-Based Course: The structure of this course is predicated at student reading at one's own pace. Considering the short duration of summer courses, at least 1 to 2 chapters will be covered in every week. To help your learning and understanding of the material, animations, videos, and/or PowerPoint slides will be provided. To measure the progress of your learning there will be two exams (a midterm and a final) and weekly quizzes. Additionally, you are required to initiate or participate in weekly discussions online, which should help you to reinforce the materials that you learned and to clear any questions or doubts about the topics that have been covered. Check the announcements on the course homepage in eCollege often as all correspondence will be through there. I will email the class when announcements have been posted. Your progress in the class can monitored using "Gradebook" in eCollege

Assignments:
Online quizzes: Throughout the term of this course, several quizzes (once in every week) will be assigned online and you need to complete them in eCollege. These quizzes will consist of either T/F, multiple choice, matching and/or short answer questions. Once you answer and submit them you will see the answers. If you do them during the week (Sunday through Sunday) in which they are assigned you will receive full credit for correct answers on Mondays. *If you are late, you won't be able to access these assignments and there won't be any make up quizzes.*

Discussion: I am hoping to have a lively constructive discussion for this class. Therefore I ask that each student post and discuss a topic they learned about in that given week. It is said that the best way to retain the material that you leaned is to teach others. Therefore I want you to attempt to "teach" the rest of the class something that you learned. In addition I may post some hypothetical questions/scenarios for discussion. Everyone is required to participate and post in weekly discussions. It will count as 100 points (20 points per week) and be worth an exam grade. *Again this is mandatory.*

Case Studies and Problem Sets: Each week, concept-based case studies and problems will be assigned. You will earn full points for timely completion of this assignment, even if your answers are not correct. Solving these problems will help your understanding of the concepts. Some of these concepts-based questions or problems may appear in exams.

Exams: There will be only two exams including the final. The exams will consist of all short answer questions. You can access your questions through eCollege. You can then copy and paste them to a word document and upload your answers to the drop box in eCollege.

Makeup Policy: The student is responsible for requesting a makeup when they are unable to take the regularly scheduled examination and must schedule the makeup in advance. Considering this as an online course, makeup exams will be scheduled only in the event of an EXCUSED absence (as defined in the Student's Guidebook). If the test is not made-up, the student will receive a zero for that exam.

Grading Policy:

Midterm	100 points
Final	100 points
Assignment-quizzes)	50 points
Assignment - Problem Sets	50 points
Discussions	100 points
Total	**400 points**

Grading Scale:
A = 90 - 100%
B = 80 - 89%
C = 70 - 79%
D = 60 - 69%
F = 00 - 59%

To find out where you stand:
You can find out up-to-date information from the gradebook available at the eCollege.

Course Calendar / Exam Schedule

Units	Date	Topic
Unit 1	July 8 - July 14	**Genes and Genomes** A) Development of gene concept B) Model Organisms and their databases
Unit 2	July 15 - July 21	**Genes and Mutants -I** A) Principle of Genetic Screens and selections B) Mapping of genes and mutants
Midterm	July 22	**Exam 1 - Midterm**
Unit 3	July 22 - July 28	**Genes and Mutants-II** A) Gene Cloning B) Genome-wide mutant screens
Unit 4	July 29 - Aug 4	**Gene Activity** A) Gene expression analysis B) Gene Interaction
Final	August 8	**Exam 2 - Final**

ALL Units AND ASSIGNMENTS ARE TENTATIVE AND MAY SUBJECT TO CHANGE!!

Academic Integrity:
A Texas A&M Commerce student does not lie, cheat, steal, and does not tolerate those who do. A violation of the Texas A&M honor code and academic integrity involves any of the following offenses: cheating, fabrication, falsification, multiple submissions, plagiarism, and complicity in any of these offenses. The first instance of cheating will result in "ZERO" on the exam and/or on the assignment. The second instance of cheating will result in "ZERO" on the course. Cheating involves copying information from another student, non-allowable materials or source and plagiarism. Once again, violations of academic integrity will not be tolerated. This class will be conducted in strict observance of the Honor Code. Refer to your Student Handbook for details.

Plagiarism: Plagiarism is a criminal activity. You must cite all sources of information. Unreferenced copying of material, whether parts of sentences, whole sentences, paragraphs, or entire articles can result in a score of zero for your assignment and may result in further disciplinary action. Citing references doesn't mean you can copy sentences from original work, you are required to rewrite and paraphrase the sentences in your own words when you cite references.

Conduct Policy:
All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See Student's Guide Handbook, Policies and Procedures, Conduct).

Students with Disabilities/Reasonable Accommodation: 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 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamu-commerce.edu

Access to Student Work:
Copies of your work in this course including copies of any submitted papers and your portfolios may be kept on file for institutional research, assessment and accreditation purposes. All work used for these purposes will be submitted anonymously.

University Policy on Payment:
The first day of class that Summer II 2011 schedules will be dropped is on Thursday, July 14th for students who have not paid the balance due on their accounts. Check the status of your accounts on MyLeo. It is available 24/7 at https://leo.tamu-commerce.edu/login.aspx .If you need assistance to pay their balance, please refer to the Bursar's Office (903-886-5051).