BSC 303 Cell Biology, CRN: 81375

Prerequisites: BSC 1406 and 1407 and Chem 1412; Corequisite: BSC 301

Instructor:	**Dr. Venu Cheriyath**
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eCompanion Site:	eCollege @ MyLeo
	Mon, Wed, and Fri 11.00 AM – 11.50 AM
Lectures:	**BA245**
Lab:	**One 3 hr lab @ STC - 324**
	Mondays 1 - 3.50 PM, or 4 - 6.50 PM
Office Hours:	Tue, Thu, and Fri 4 PM – 5 PM Or by appointment, include BSC 303 Cell Biology in subject line of E-mails.

Course overview:

This course will provide a rigorous foundation in current cell biology so that advanced level cellular and molecular biology courses will be more meaningful. Without the recommended prerequisites and a good grasp of basic fundamentals of chemistry, this course will likely prove very difficult.

Student Learning Outcomes (SLO):

At the completion of this course students will be able to:

1) Identify the structure and functions of animal cells, organelles and their differences from prokaryotic cells.
2) Understand the chemical architecture of living cells and the functions of the major groups of biological molecules and how the information is passed from DNA to proteins.
3) Perform various cell staining techniques to observe cellular organelles under a microscope.
4) Assess the viability of cells, quantitate proteins and separate them on SDS-Gel.

Required Textbook: **Becker's World of the Cell, 8th Edition**, by Hardin, Bertoni, and Kleinsmith, ISBN-13: 978-0-321-71602-6

We will cover most of the subject matter presented in this book, but not necessarily in order. Chapter assignments are listed on the Course Schedule. For some topics, this book presents more detail than we need; however, it omits some topics that will be discussed in the course.

Class Policies:

Attendance & Participation (20 credit points, 2% of total):

I expect your attendance in ALL classes and labs. This course will follow active learning methods and your active participation in class activities are expected. You will work both in groups and individually during and after the class to complete various assignments. You may earn up to 10 points of total 1%) for not making more than 3 unexcused absences and another 10 points for active participation in class room activities. Attendance would be taken in the beginning of every class using iClickers. Similarly, iClickers will be used to measure your active participation in class activities. If you are not present in most time of a class, it will be counted as an absence and you will lose points for both attendance and for participation. You are responsible for all material and assignments covered in class whether you are present or not.

Clickers: The iClicker student response system will be used in all classes of this course. The iClicker helps me to understand what you know and gives everyone a chance to participate in class. As mentioned earlier, iClicker will be used to keep track of attendance; (see the attendance policy on page of the syllabus). Participation with iClicker will account for 1% of your total grade. I will drop 2 of the lowest weekly scores to account for times you forget to bring your clicker to class.

iClickers are available for checkout at the Gee Library.
Student Responsibilities:
The iClicker will be used almost every class, and you are responsible for bringing your remote daily. You are also required to make sure that is charged, connected, and in proper working order at all times. If your device is dead or not properly connected, you will not earn points towards your grade. You are required to register your device.

Lost or Damaged Devices: If device is lost/stolen/damaged the student will have to:
1) Notify instructor immediately.
2) Provide written documentation of the situation to the instructor.
3) Contact the Library.
4) The Library will automatically place hold/fine on student's account

End of Semester Procedure: Devices are to be checked back into the library no later than the Friday before final exams. Devices that are not checked back in will result in a hold being placed on the student's account.

Cheating Using Clicker
I consider bringing a fellow student's iClicker to class to be cheating and a violation of the University Honor Code. If you are caught with a remote other than your own or have votes in a class that you did not attend, you will forfeit all clicker points and may face additional disciplinary action.

Lecture Materials: Power Point slides that I use for delivering lectures will be available at eCollege, the ecompanion site for this course. **However, I would like to make it very clear that Power Point slides are meant for me to deliver lectures and not to be treated as lecture note**. You may use it as a reference or guide to read the book but not as study material. If you just use the PowerPoint slides as study material instead of reading books, you may not perform good in tests.

Overview of Assignments:

1) Problem Solving Assignments (65 points of total): At the beginning of each unit/chapter, a set of problem solving questions will be assigned, usually on Mondays, which are due in the next Monday before 1 PM. During this period you may discuss these questions with your colleagues or solve these problems as a group. However, you have to write answers in your own words. Answer key of problem sets will be available in eCollege after their due date. While, some of these problems will be reviewed in the lab. I encourage all of you to bring a printed copy of the solved problems for review sections. I encourage all of you to go through the answer keys and discuss any questions or doubts that you may have in the discussion board. Based on the concepts covered in problem sets and lectures there will be weekly quizzes (multiple choice) for 5 points. Therefore, it works for your advantage to solve these problems by yourself as you go along the week, which will increase your success in weekly quizzes and later in exams. Additionally, bonus questions (10%) of each exam will be chosen from weekly problem sets with some modification. While solving problems will augment concepts covered in lectures and help you retain them. Also, some of these questions may serve as the basis for multiple choices and for short answer questions of exams.

For completing the assigned problems in time you will earn 100% of the problem solving assignment grade. It is mandatory that you submit your solved problems in the respective drop box available in eCollege. Late submissions of problem sets are not allowed and will receive "0" points for late submissions. **The problem sets submitted by any other means such as E-mail or printed copy won't be evaluated**.

2) Weekly Quizzes (65 points of total): Each week there will be a quiz which needs to be taken online in eCollege. Quizzes are due @11.59 PM on every Tuesday. Each quiz will contain 10 questions and worth of 5 points. If you miss a quiz, there won't be any makeup quiz.

JAMP Room Tutorial (10 Extra Credit Points): In order to help you with your studies, tutoring is arranged for this course. Besides coming to the office hours, you may attend and take the help of tutors to increase your performance in this course. For active participation, i.e., 2 hrs in every week in JAMP room tutorial you may earn up to a total of 10 extra credit points.

Exams and Grades: The lecture part of the course will weigh 75% and lab part will weigh 25% of the total. For the lecture part there will be three exams (150 points each) throughout the term and a cumulative final exam (150 points). The exam will consist of three parts, multiple choice (50% of total score), essays/short answers (50% of total score) and bonus questions (for 10% of total score). Multiple choice and Essay questions will test critical thinking, analytical ability, and the understanding of subject matter and bonus questions will be based on problem sets. Therefore, it is important to understand the concepts to perform well in this course.

Grading Policy:

4 exams including the final	= 600 points (60%)
Weekly Quizzes	= 65 points (6.5%)
Weekly Problem sets	= 65 points (6.5%)
Attendance and Participation	= 20 points (3.0%)

Lab = 250 points (25%)
Total = 1000 points
Grading Scale:
A = 900 to 1000 points (>90%)
B = 800 to 899 points (>80%)
C = 700 to 799 points (>70%)
D = 580 to 699 points (>58%)
F = 579 or fewer (<58%)
To calculate where you stand: Your up to date scores and percentage will be available in the grade book of eCollege. Add your 3 exam scores, scores in assignments, and your final score of lab and assignment plus any extra credit points that you have, which will be your total score in 1000. Calculate the percentage. This will be your grade.

Course Calendar and Exam Schedule:

Units	Date	Chapters	Subject Matter
Unit 1	Aug 31 – Sept 4	Chapter 1	Introduction to Cell Biology
Unit 2	Sept 7 – Sept 11	Chapter 2	Chemical basis of life
Unit 3	Sept 14 – Sept 25	Chapter 3	Macromolecules
Unit 4	Sept 28 – Oct 2	Chapter 4	Cell and Organelles
Exam I, October 5			
Unit 5	Oct 5 – Oct 9	Chapter 5	Bioenergetics
Unit 6	Oct 12 – Oct 16	Chapter 6	Enzymatics
Unit 7	Oct 19 – Oct 23	Chapter 7	Membranes, Function, & Chemistry
Unit 8	Oct 26 – Oct 30	Chapter 8	Membrane transport
Exam II, November 2			
Unit 9	Nov 2 – Nov 6	Chapter 15	Cytoskeleton
Unit 10	Nov 9 – Nov 13	Chapter 17	Cell adhesion & Cell junctions
Unit 11	Nov 16 – Nov 20	Chapter 18	DNA, Chromosomes and Nucleus
Unit 12	Nov 23 – Nov 27	Chapter 21	Gene Expression I
Exam III, November 30			
Unit 13	Nov 30 – Dec 11	Chapter 22	Gene Expression II
Final Exam, December 16th, 10.30 am to 12.30 pm			

ALL DATES AND ASSIGNMENTS ARE TENTATIVE AND MAY SUBJECT TO CHANGE

Academic Integrity: A Texas A&M University - 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 results in "**ZERO**" on the exam and/or on the assignment. The second instance of cheating will results 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.
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).

Cell Phones/Pagers/Laptop/Tablets: Please turn your cell phone and/or pager (and other electronic devices) off during class. If you are on-call for your work, please place the cell phone or pager on silent or vibration mode. Electronic devices are strictly prohibited in lab.

If you utilize a laptop to take class notes, please be aware of potentially distracting others around you and seat yourself accordingly. Additionally, you may be asked to leave the class if it is determined you are utilizing a computer or electronic device to do outside work, surf the web inappropriately or communicate personal conversations. Texting is prohibited and devices will be collected and kept until the end of class.

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

Tapes and Notes: While recordings of this class may be made for personal use with prior permission, recordings may not be sold or distributed to others. While you may make copies of these notes for your personal use, no copy of these notes may be distributed to anyone other than persons who are currently enrolled in the class; nor may any copies be sold.

Lab behavior: If handled improperly, some chemicals used in the lab become dangerous. Drinking, eating and the use of electronic devices is PROHIBITED in the lab! Disruptive behavior in lab that could be considered a hazard to another student will result in immediate removal from the lab. Intentionally damaging lab equipment may result in a ZERO for the class and possibly severe financial penalties as many pieces of equipment we will be using are expensive. SEEK HELP If you do not know how to use some instruments (see laboratory syllabus for details)

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*
Gee Library, Room 132, Texas A&M University-Commerce
Phone (903) 886-5150 or (903) 886-5835; Fax (903) 468-8148

StudentDisabilityServices@tamu-commerce.edu

Behavior: 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).

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. Early Intervention for First Year Students: Early intervention for freshmen is designed to communicate the University's interest in their success and a willingness to participate fully to help students accomplish their academic objectives. The university through faculty advisors and mentors will assist students who may be experiencing difficulty to focus on improvement and course completion. This process will allow students to be knowledgeable about their academic progress early in the semester and will provide faculty and staff with useful data for assisting students and enhancing retention. Grade reports will be mailed by the end of the sixth week of the semester.*