University of Puerto Rico  
Mayaguez Campus  
Biology Department  

Biology 3010- CELLULAR PHYSIOLOGY  
Syllabus/Prontuario  

Cellular Physiology  

3 Credits (2 one-hour class conferences and 1 three hour laboratory per week)  
Prerequisites: Quim 3031 or Quim 3461 and Quim 3462  
Note: If you have not successfully completed these prerequisites you are ineligible for enrollment in this course (i.e., Biol 3010) and will not be permitted to receive credit for it.  

Lab Section Schedule (visit lab to find out about laboratory requirements from your instructor); laboratory counts as 25% of student’s final grade.  

Course Description: Study of the Structure and Function of life molecules, and the interactions among these, at the cellular level.  

Exams: there will be three in-class exams; exact dates of exams to be arranged, however the first exam will occur approximately during the 3rd to 4th week of classes, the second exam will occur during the 8th - 9th week of classes, and the third exam will occur 12th to 13th week of classes. Each exam counts as 18.75% of students final grade.  


Grades:  
89.50 % and above = A  
79.50 - 89.49 9% = B  
64.50 - 79.49 % = C  
50.00 – 64.49 % = D  
49.99 % and below = F  


Topics and Exam (each exam is worth 18.75% of Final Grade; as there are four total exams [including the final], 4 x 18.75% = 75%; thus, these four exams make up 75% of the student’s total grade)
First Exam

I. Introduction to the Chemistry of Life
II. Cell Biomolecules
III. The Living Cell
IV. Energy and the Cell

Second Exam

V. Enzymes
VI. Cell Membranes
VII. Crossing the Cell Membrane

Third Exam

VIII. Energy Production Pathways
X. DNA Structure and Replication
XI. Transcription and Translation

Final Exam

IX. Photosynthesis
XII. Genes and Their Regulation
XIII. Membrane Potentials and Action Potentials: The Neuron
XIV. Signal Transduction
XV. Mechanisms of Cell Division in Eukaryotes

Note: Students taking this class will be expected to master both knowledge of molecular structures and biochemical pathways. These topics will constitute exam material. While all chapters touch on these matters to some extent, it is especially chapters I and II that emphasize molecular structure and related topics while chapters VIII, IX, X, and XI place particular emphasis on both molecular structure and biochemical pathways. For example, students will be expected to learn the following metabolic pathways: glycolysis, citric acid cycle, beta oxidation pathway, protein metabolism, the electron transport chain/oxidative phosphorylation, photosynthesis, and the Calvin cycle. Other pathways will be required as well.

According to Law 51
Students will identify themselves with the Institution and the instructor of the course for purposes of assessment (exams) accommodations. For more information please call the Department of Counseling and Psychological Services at the Dean of Students Office (DE-21) at (787) 265 - 3864 or (787) 832 - 4040 extensions 3772, 2040 or 3864. Email: pura.vicenty@upr.edu.
**Academic Integrity:**

The University of Puerto Rico promotes the highest standards of academic and scientific integrity. Article 6.2 of the UPR Students General Bylaws (Board of Trustees Certification 13, 2009-2010) states that academic dishonesty includes, but is not limited to: fraudulent actions; obtaining grades or academic degrees by false or fraudulent simulations; copying the whole or part of the academic work of another person; plagiarizing totally or partially the work of another person; copying all or part of another person answers to the questions of an oral or written exam by taking or getting someone else to take the exam on his/her behalf; as well as enabling and facilitating another person to perform the aforementioned behavior. Any of these behaviors will be subject to disciplinary action in accordance with the disciplinary procedure laid down in the UPR Students General Bylaws.