

## TEXAS COLLEGE

### Division of Natural and Computational Sciences DEPARTMENT OF NATURAL SCIENCES

#### Syllabus for General Biology I (Major), Fall-2005

Course Number: Biol - 1472001

Course Description: This course is designed to serve as an introductory course for those students who wish to become Biology majors. It emphasizes the importance of cell, processes that occur in the cell and overall unity and diversity of life and living organisms.

Credit Hours: 4 hours

Instructor: Mamta Gupta, Ph.D.

Telephone: (903) 593-8311 Ext. 2260

Office: MSBC 104-C

Office Hours: MWF 11:00 – 1:00 p.m., TR 8:00-10:00a.m. Please feel free to stop by the office at any time and if I am there I will be happy to meet with you.

Text: General Biology 9<sup>th</sup> Edition. By S. Mader  
McGraw hills Publishers.

Class: Lecture: MWF, 9.00-9.50 a.m. and lab

Attendance: Texas College attendance policy allows one unexcused absence per credit hour.  
Policy: Every unexcused absence thereafter may result in a lower letter grade or dismissal from the class. Refer to the Texas College Academic Policies and Procedures for further description.

Prepared by: \_\_\_\_\_  
Dr. Mamta Gupta, Assistant Professor Date

Approved by: \_\_\_\_\_  
Dr. M.S.T. Namboodiri, Division Chair Date

**Purpose and Goals:** By the end of the semester the student will be able to satisfactorily complete all them listed learning objectives with a minimum of 70% competency level based on the grade determination below.

**Methods of Instruction:** Lectures and hands-on learning experiences in the Life Science laboratory.

**Methods of Evaluation:** Three major exams (theory), comprehensive final exam, and laboratory work assignments.

**Grading Determination:**

Test #1 -----	15%
Test #2-----	20%
Test #3 -----	15%
Final Test-----	20%
Laboratory -----	20%
Problem Sets, H.W. --	10%

**Grading Scale:**

90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
Below 60	F

NOTE: Failure to complete work does not result in a grade assignment Incomplete. Incomplete is assigned when circumstances beyond the control of the student make it impossible for him/her to complete all the work of the course. To obtain credit, an incomplete grade must be removed by the end of the next regular term or within one calendar year whichever rule applies to the particular student. (2004-2005 Texas College Catalog, p. 42) If the student fails to remove the “I” within the allotted time period, the grade automatically becomes an “F”.

**Withdrawal Policy:** Withdrawal from a course is the student’s responsibility. Refer to the Texas College Academic Policies and Responsibilities for additional information on the College’s withdrawal policy.

**Course Policy:** Students are expected to attend classes and to read the sections in the text prior to classroom discussion. Class participation is strongly encouraged. Most students find that at least three readings are required to acquire full understanding of a textbook. First read the chapter objectives and skim the text for the major topics covered, then carefully read the text highlighting significant material and making notations and finally use a third reading to check your comprehension of the subject matter. A written summary will enhance your understanding and serve as a study guide prior to examinations.

**Lab:** All lab and class work assignments will be completed in class, library or outside of class. Students should expect to spend an additional six to nine hours per week on preparation and homework assignments. Students are responsible for obtaining missed notes, handouts and assignments.

**Reading Assignments/Homework:** There will be a reading assignment prior to each week’s lecture periods to prepare you for the lecture. The student must complete each assigned quiz of applicable lecture. These quizzes are part of the homework. The student will receive a grade based upon the combined score. There will be no make-up work.

There will be five or six online essay questions during the semester. Student answers are graded interactively. **THERE WILL BE NO MAKEUPS FOR THESE QUESTIONS UNDER ANY CIRCUMSTANCES.** Additionally, you must complete ALL the steps in the process or you will receive a ZERO for that assignment.

**Lecture Exams:** The three periodic exams and the FINAL exam will cover material presented in class as well as information from the textbook. The examinations will consist of multiple-choice questions and short answer questions. All exams will be COMPREHENSIVE, although the first three exams will emphasize material covered during the exam period. The final lecture exam is also COMPREHENSIVE, giving you the opportunity to synthesize various topics covered during the semester. (In general the review questions will come from those topics that were most often missed on previous exams or homework.)

You may sometimes have more than one exam scheduled during the same week or even on the same day. It will be up to you to manage your time properly to deal with such situations. If you feel you have a problem in this area, please see me WELL BEFORE the exam.

**Make-up Policy:** There will be NO make-ups for unexcused missed exams. If you miss one lecture examination, the percent score on the final will be substituted for the missed test. You will receive a zero for each additional missed exam. In the case of crises and emergencies (that you can document and that are considered a valid excuse by me), talk to me (or phone me) BEFORE the exam and more flexible arrangements may be scheduled. (Under those conditions the exam may be unique, and may be more difficult)

**Classroom Decorum:** Cell phones shall be turned off during class. If your cell phone rings during class deduction of points will be made from possible bonus points.

Do NOT carry on personal conversations once lecture has started. Repeated offences will result in you being removed from the lecture.

**Other:** It is unlikely that you will earn an acceptable grade if you do not attend class regularly. Attendance will be recorded for each lecture and will be considered in the final grade, especially in borderline cases. Attendance alone does not guarantee a passing grade. It is important that you take complete and comprehensive notes of the lecture material. It is also essential that you study regularly.

**Academic misconduct statement:** You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct. Students who engage in academic misconduct are subject to college disciplinary procedures.

### **Course Objectives:**

After completing this course student will be able to:

1. Develop and test one or more hypothesis.
2. Explain how to care for and use a compound microscope.
3. Define an element, atom, molecule, ion isotope and a compound.
4. Explain the differences among covalent, ionic and hydrogen bonds.
5. State the cell theory.
6. Give examples of redox reactions and their importance to life.
7. Summarize the processes of photosynthesis and oxidation of glucose.
8. Describe process of mitosis and meiosis.
9. Perform one factor and two factor genetic crosses.
10. Describe Structure of RNA and DNA.
11. Explain the process of protein synthesis.

### **Laboratory Outlines:**

1. Laboratory safety.

2. The Scientific method and its application to everyday problems.
3. Atomic and molecular structure.
4. The microscope.
5. Qualitative tests for organic macromolecules.
6. Factors that affect the rate of osmosis.
7. Central Dogma.
8. Mitosis and meiosis.
9. Enzyme Kinetics
10. Genetic problems.

Sr. no	Chapter	Topics
1	A View of Life	Introduction to Biology and Characteristics of life
2	Basic Chemistry	Atoms, Energy and Bonding, Characteristics of water, Carbon and Organics and Organic molecules
3	Cell Structure and Function	Cell Theory, Prokaryotes, Eukaryotes, Cell membrane, Cell organelles
4	Membrane Structure and Function	Membrane Transport
5	Metabolism: Energy and Enzymes	Thermodynamics, REDOX Reactions, Enzymes
6	Photosynthesis	Photosynthesis
7	Cellular Respiration	Oxidation of Glucose
8	The Cell Cycle and Cellular Reproduction	Cell Cycle, Mitosis
9	Meiosis and Sexual Reproduction	Meiosis

**Other Web Resources:**

<http://www.biology.about.com>

<http://www.spc.cc.tx.us/biology/lsmith/lsmith.html#Zoology>

**Study Suggestions for Introductory Biology from other universities:**

University of Georgia Marshall Darley, <http://www.botany.uga.edu/~darley/studybio.html>

Southern Plains College, <http://www.spc.cc.tx.us/biology/lsmith/lsmith.html#Zoology>

Online Biology Book <http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookTOC.html>

[Cornell Learning Strategies](http://www.clt.cornell.edu/campus/learn/learn.html), <http://www.clt.cornell.edu/campus/learn/learn.html>

How to Succeed in Biology: [University of Miami](http://fig.cox.miami.edu/~cmallery/ACADEMIC.HTM),

<http://fig.cox.miami.edu/~cmallery/ACADEMIC.HTM>

<http://fig.cox.miami.edu/~cmallery/150syllabus.f03.htm>