TEXAS COLLEGE

Division of Natural and Computational Sciences
DEPARTMENT OF NATURAL SCIENCES

Syllabus for
Life Science, Fall-2006

Course Number:	Biol - 14790
Course Description:	Life Science is an introductory course with laboratory for non-Biology Major Students. It is designed to meet the academic foundation to interpreting and solving contemporary biological problems, requirement in science. The course deals with basic life processes and how the contemporary issues of health and environment impact living organisms. The course provides information and knowledge on the scientific approach.
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 a.m-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:	The Living World 4th Edition. By George B. Johnson, McGraw hills Publishers.
Class:	Lecture: TR, 10.00-11.20 a.m. and lab
Attendance: Policy:	Texas College attendance policy allows one unexcused absence per credit hour. 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. 25) 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.

Learning Objectives:

1. Explain the characteristics of life.
2. Explain the steps of Scientific method.
3. Apply the scientific method to real life situations and problems.
4. Describe the structure and function of four major biomolecules.
5. Describe the general structure and functions of prokaryotic cell.
6. Describe the general structure and functions of eukaryotic cell.
7. Describe the general structure and function of living organisms.
8. Define and explain different life processes such as diffusion, osmosis, transport, digestion, respiration, reproduction, circulation, adaptation, evolution etc.
9. Understand the impact of human activities on organisms and their habitat.
10. Understand the interaction between living organisms and humans.
11. Discuss the impact of modern biomedical and environmental research on citizens of the U.S. and the world.

LECTURE OUTLINE:

1. Definition of Science, life, and characteristics of life Scientific method.
2. Unit of life, cell its structure and function.
3. Absorbance, transport of nutrients and elimination of waste.
4. Cell multiplication and division, mitosis and meiosis.
5. Elementary Genetics.
6. Nutrition, Energy and life.
7. Natural Selection and evolution.
8. Unicellular and multicellular organisms.
9. Flowering and non Flowering plants.
10. Vertebrate and non-vertebrate animals.
11. Organ and organ system in animals.
12. Human reproduction and utopian motherhood.
13. Environment and living organism.
14. Interaction between living organisms and humans.
15. Impact of biomedical research on living organisms.

Laboratory Outlines:

1. Laboratory safety.
2. The Scientific method and its application to everyday problems.
3. Atomic and molecular structure.
4. The microscope.
5. Factors that affect the rate of osmosis.
6. Central Dogma.
7. Mitosis and meiosis.
8. Flowers.
9. Genetic problems.
10. Protozoa Pond life.
11. Histology.
12. Organ Systems.

PART ONE | THE STUDY OF LIFE
Chapter 1 The Science of Biology
Chapter 2 Evolution and Ecology
PART TWO | THE LIVING CELL
Chapter 3 The Chemistry of Life
Chapter 4 Cells
Chapter 5 Energy and Life
Chapter 6 How Cells Acquire Energy
PART THREE | THE CONTINUITY OF LIFE
Chapter 7 How Cells Divide
Chapter 8 Foundations of Genetics
Chapter 9 How Genes Work
PART FOUR | THE NEW BIOLOG Y
Chapter 10 Gene Technology
Chapter 11 Genomics
Chapter 12 The Revolution in Cell Technology
PART FIVE | THE EVOLUTION AND DIVERSITY OF LIFE
Chapter 13 Evolution and Natural Selection

Chapter 14 How We Name Living Things

Other Web Resources:

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
http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookTOC.html

Cornell Learning Strategies, 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/150syllabus.f03.htm