

**C. Estrella**  
**Biol. 4-Principles of Biology**  
**Lecture:** MWF 9-10 am **Lab:** W1-4 PM

**Office:** S-44  
**Phone:** 384-6294  
**Hours:** M-Th 12:00 -1:00 PM

### **Fall '95 Syllabus**

**Textbook:** Understanding Biology, Raven P., and Johnson G., third edition, Mosby Publishing.

**Lab Manual:** General Biology Laboratory Manual - Investigations Into Life's Phenomena, Skavaril, R., Finnen, M., Lawton, S., Saunders College Publishing.

**Description:** This course is a study of the principles of biology. Areas of study will include aspects of the philosophy of science, organization and function of the cell, energy transfer (photosynthesis and cellular metabolism, reproduction, Mendelian and molecular genetics, and evolution. This course is designed for biology majors.

**Lecture:** The lecture portion of the class is held every Monday, Wednesday, Friday from 9:00 am to 10:00 am. Lecture exams and quizzes are given on Fridays as per schedule or as otherwise stated. There may be "pop" quizzes given at any meeting. There will be three lecture exams each worth 100 pts. and a final exam worth 150 pts. The final is partly comprehensive. Each quiz is worth 20 pts. (five quizzes will be counted for a total of 100 pts.) You may not make-up missed quizzes. Make-ups of exams will only be allowed in extreme emergency cases and you must notify me before the exam.

Your questions and participation in class is encouraged. Anything you may provide that will effect learning in the class is always welcome. - **Don't be shy!**

Material for lecture exams will be taken mostly from your notes (so it is important to maintain good attendance). Any assigned outside reading material may also find its way on exams.

**Lab:** Laboratory sessions are held every Wednesday from 1:00 PM to 4:00 PM. Usually there is a short introduction to the lab and you will be working independently and in groups. Your participation and contributions in lab is also encouraged to enhance the learning of the concepts being discussed in lecture.

There will be three lab practicals, each worth 100 pts. These may not be made up under any circumstances as they require much preparation to set up and materials are not available after the exam.

**Laboratory reports** are to be done using the suggested format which I will introduce to you. Drawings and diagrams are to be done with pencil and colored pencils on biology paper available from the bookstore. Graphs are to be done on graph paper also available in the bookstore. Make sure you label all drawings, graphs, and diagrams and that they are referred to in the text of your report. Use of computers for word processing your reports is highly recommended. You may use the computers in S-15. All you need is your own disc for storage. Instructions for using the computers are available. Your reports are due no later than the following lab meeting. Each lab report is worth 20 pts. (your ten highest scores will be counted) for a total of 200 points.

**Lab rules:** no eating or drinking in the laboratory (for your own safety). You may take breaks as required during the lab period. Read your lab exercises before you come to class.

**Term Assignment:** You will be required to write a term paper on a selected topic. The purpose of this assignment is to give you experience reading scientific literature and communicating your findings in a coherent paper. This assignment is to be double-spaced, 10 pages in length and properly cited. The assignment is worth up to 100 pts. in Biology 4 and must be turned in on or before the date listed on your schedule sheet. You must check with me before you start the assignment to determine what the topic of your paper will be. You will be given a list of suggested topics. Other pertinent topics or modification of the suggested topics is negotiable.

In order to help you obtain the proper training in completing this exercise, you are encouraged to enroll in Information Literacy (LR 30: 2 units, Tu and Th, 3-4 p.m.). This course provides basic college-level knowledge and skills necessary for effective use of libraries and information sources including the development of search strategies, the effective use of print and C-D Rom reference sources, the evaluation of information sources, the understanding of issues affecting information access in our society, the conventions of scholarly citation, and an introduction to on-line databases through the use of INTERNET and other electronic resources.

Your paper must have the proper format: Introduction and thesis statement, development of previously outlined material in the text or body of your paper, conclusion, and bibliography (reference) section. All citations are to be made parenthetically within the paper and properly referenced. If you choose not to enroll in the LR 30, it will be assumed that you know how and will write the term paper according to proper term paper format. You alone are responsible for the condition of your paper as it is received by me.

### **Summary of points and grading scale:**

Lecture Exams (3).....	300
Final Exam (1).....	200
Quizzes (5).....	100
Lab Exams (3).....	300
Lab Reports (10).....	200
Term Assignment.....	100
Total Points:.....	1200

<u>Grading Scale:</u>	90% = A
	80% = B
	70% = C
	60% = D
	59% = F

**Attendance:** Missing more that 20% or three consecutive absences may result in being dropped from class. It is your responsibility to notify me and/or the records office in writing if you intend to drop this class after the initial three week grace period. If your name remains on the final census and grade report, I am obligated to assign a letter grade (A, B, C, D, or F).

## TENTATIVE SCHEDULE

WEEK	DATE	TOPIC	READING (Chapters)	LAB EX.
1	Aug. 14-18	Intro; Characteristics of Life Nature of Science	1	1, 2
2	21-23 25	Chemistry of Life <u>Quiz 1 (Science-Chemistry)</u>	2	3
3	Aug. 28- Sept. 1	Cell Structure and Function	4	4
4	4	<b>Holiday (Labor Day)</b> Cellular Transport <u>Quiz 2 (Cell Structure/Function)</u>	5	
5	11-15	Energy and Metabolism <b>Exam I (Intro-Cell Transport)</b>	6	Lab Exam 1 (labs 1-5)
6	18-22	Cellular Respiration	7	6
7	25-29	Photosynthesis <u>Quiz 3 (Cell Respiration.)</u>	8	7
8	Oct. 2-6	Cell Reproduction	9	8
9	9-13	Mendelian Genetics <u>Quiz 4 (Photosynthesis)</u>	10	9,10
10	16-20	Human Genetics	11	11
11	23-27	DNA: The Genetic Material <b>Exam II (Energy-Human Genetics)</b>	12	<b>Lab Exam 2</b> (labs 6 - 11)
12	Oct. 30 - Nov. 3	Genes and How They Work <u>Quiz 5 (DNA)</u>	13	Recomb. DNA (Handout)
13	6-8 10	Gene Technology <b>Holiday (Veteran's Day)</b>	14	Electrophoresis (Handout)
14	13-17	Evidence of Evolution How Species Form	15 16	16

### TENTATIVE SCHEDULE (continued)

WEEK	DATE	TOPIC	READING (Chapters)	LAB EX.
15	20 22-24	Evolution of Life on Earth <b>Holiday (Thanksgiving)</b>	17	(no lab)
16	Nov. 27 - Dec. 1	Population Dynamics <u>Quiz 6 (Evidence-Speciation)</u>	20	17
17	4-8	Interaction of Species <b>Exam III (DNA-Evolution)</b>	21	<b>Lab Exam 3</b> (labs Recomb. - 17)
18	Dec. 14	<b>Final Exam</b> (Ecology (Ch.20, 21) and Comprehensive)		