

PLANT BIOLOGY

S. CALLISON

Reedley College-Spring 2000

Lecture M/W 12:00 to 12:50 in LFS-11

Lab W 2:00 to 4:50 LFS-11

I. **OFFICE HOUR:** Thursday 11 to 1 or by appointment. Voice mail #3821

Email shaunnac@jps.net

II. **PREREQUISITES:** Engl. 25 &/or 26; Math 1.

III. **REQUIRED TEXTS:**

- A. Rost, Barbour, Stocking, Murphy- Plant Biology. 1998. Wadsworth Publishing Company.
- B. Young, Paul- The Botany Coloring Book. 1982. Harper Perennial.
- C. S.A. Foletta, KRCC Plant Biology, Laboratory Reports.
- D. Coloring utensils

IV. **EQUIPMENT AND MATERIALS:**

- A. Lab supplies will be made available for each lab exercise but a replacement fee will be charged for lost or broken materials.

V. **COURSE OBJECTIVES**

- A. To gain an understanding of basic biological terms and principles.
- B. To study the structure and function of various life forms.
- C. To become aware of the diversity of life and become familiar with hierarchical schemes of biological organization and taxonomy.
- D. To be able to recognize and identify different plants through the use of lab specimens, lab color plates, slides, overheads, etc.
- E. To perform basic hands-on experiments in lab to increase your understanding of plant life.

VI. **EVALUATION:**

A. Lab:	50%	
	3 lab exams (100 points each)	= 300 points
	14 lab reports (10 points each)	= 150 points
	<u>Lab quizzes</u> (5 points each)	= <u>70 points</u>
	Total	<u>520 points</u>

*lab reports that are behind by more than 2 labs will not be excepted. If you miss a lab you automatically loose 3 points on that lab report. Lab quizzes can not be made up.

Lecture:	50%	
	3 tests (100 points each)	= 300 points
	<u>Quizzes 14</u>	= <u>130 points</u>
	Total	430 points

*Quizzes will be given in lecture at the end of each section. There will be **no make-ups** on quizzes, due to the fact that you will be able to drop your lowest score.

B. **GRADES** will be determined on a percentage basis:

A: 90% B: 80% C: 70% D: 60% F: 59% and below

VI. ATTENDANCE POLICY:

- A. Excessive absences &/or a failing grade will cause you to be dropped on March 10th.
- B. **NO MAKE-UPS ON TESTS**
- C. 20 Points extra-credit possible. Research a topic that is covered in class on the Internet, newspaper, or scientific magazine. Turn in a summary of the article and include what you learned &/or your opinion of it. Your summary should be typed (12 font) and double spaced with one inch borders. Each summary is worth a maximum of 5 points.

VII. COURSE OUTLINE:

WEEK	LECTURE	LAB
1	Chapter 1	1
2	Monday ~HOLIDAY Chapter 2	2
3	Chapter 3	3
4	Chapters 3 & 4	4
5	Monday ~HOLIDAY Chapters 5-6-7	5
6	Test #1	Test #1
7	Chapter 15	7
8	Chapters 8-9-10	8
9	Chapters 3-12-16	9
10	Chapters 18-19	10
11	Chapters 20-21	11
12	Test #2	Test #2
13	Chapters 22-23	13
14	Chapter 24	14
	~~~~~SPRING BREAK~~~~~	
15	Chapters 13-25	15
16	Chapter 14	16
17	Chapters 26-27	<b>Test #3</b>
18	Test #3 <b>FINALS WEEK</b> Friday May 19 th 10:30 to 12:30	-----NO LAB-----

# CHAPTER 1

## I. LIFE

1. What is it?
2. Non-living and living objects are made up of the same particles  
*protons, neutrons and electrons
3. **DNA** sets them apart  
Example= frog and rock

## II. ORGANIZATION

- A. **Cell**= composed of biological molecules is the ***BASIC UNIT OF LIFE!!***

BIOSPHERE  
ECOSYSTEM  
COMMUNITY  
POPULATION  
MULTICELLULAR ORGANISM  
ORGAN SYSTEM  
ORGAN  
TISSUE  
CELL  
ORGANELLE  
MOLECULE  
ATOM  
SUBATOMIC PARTICLE

### B. Classification

species  
Genus  
FAMILY  
ORDER  
CLASS  
PHYLUM (DIVISION= PLANTS)  
KINGDOM (5)  
a. MONERANS  
b. PROTISTANS  
c. FUNGI  
d. PLANTAE  
e. ANIMALIA

## III. BOTANY

- A. **Botany**= the study of plants.

1. Comes from the greek botane = plant.

### B. Our dependence on plant life

1. It is related to everything we need in order to survive:  
a. **FOOD**

- b. **CLOTHING**
  - c. **SHELTER**
  - d. **MEDICINE** [all medicine and drugs at one time came from plants, fungi, or bacteria.]
  - e. **ENERGY**
  - f. **OXYGEN**
2. Interdependency among all life=recycling of raw materials (energy)  
**PRODUCERS** (plants photosynthesis)

**DECOMPOSERS**  
(bacteria and fungi)

**CONSUMERS**  
(animals)

### C. **SCIENTIFIC METHOD**

1. SPONTANEOUS GENERATION

2. ***The method involves***

**HYPOTHESIS**= a explanation for something to be observed

**TESTS** =experimentation, observation, models, control groups  
*recording & classification of facts*

**RESULTS & CONCLUSION [PRINCIPLE]** objectively reporting  
**THEORY**

### IV. **MAJOR AREAS OF PLANT STUDY:**

- A. Plant anatomy
- B. Plant physiology
- C. Plant geography
- D. Plant ecology
- E. Plant morphology.
- F. Plant genetics
- G. Plant cytology
- H. Plant taxonomy
- I. Plant pathology