

School of Engineering, Science and Technology
Department of Biology
Biol. 114; General Botany

Name: Shaukat M. Siddiqi
Semester: Spring 2004
214 Lockett Hall
Office tel.# 524-6838
Email ssiddiqi@vsu.edu

Course Contents: The purpose of this course is to acquaint the students with the plants as living organisms, what is their importance to other organisms of the world including human being. How the plants have influenced the mankind over the years and changed the history of the world.

This course, moreover-will emphasize about the structure and functions of plant parts and the processes these organs perform. The plant diversity and evolutionary processes that have changed the plant kingdom are to be explored during this term. We will emphasize the process of science and the scientific process involving plant and how botany, the study/science of plants is done. There are many unanswered questions and unresolved conflicts in botanical sciences at different levels of inquiry, and the questions will be posed to the students to try to resolve the above mentioned problems.

It is my earnest hope to infuse the interest in study of plants and trigger the curiosity among the students and sharpen their critical thinking skills through the lecture and laboratory sessions.

Grading System:

A = 90-100
B = 80-89
C = 70-79
D = 60-69
F = Less than 60

Distribution of Grade:

25 % Paragraphing the chapter listed in the syllabus, and the class notes.
75 % all tests

There will be four tests and will be announced in the class. If you miss the test ,please be reminded to talk to the instructor to make up that test within one week. After one week there will be NO MAKE UP TESTS. Only one make up test will be allowed during the semester..

Students are encouraged to seek help from the instructor or any tutor from senior biology majors, or the tutors provided by the university.

Cheating in the examinations will reduce the numerical grade to zero. Instructor's judgement is final.

Class Decorum: Students and the teacher will show mutual respect. Students and Students will

SCHOOL OF ENGINEERING, SCIENCE AND TECHNOLOGY
DEPARTMENT OF BIOLOGY
 Biol.114-01 & Biol. 114-10

Name: Shaukat M.Siddiqi
 Office:214 Lockett Hall
 Tel.# (804) 524-6838
 Email: ssiddiqi@vsu.edu
 Semester :Spring 2004

| | | | | | |
|----------------|-------|------|-------|-------|-------|
| Office hours : | M | T | W | R | F |
| | 10-11 | 9-11 | 10-11 | 9-10; | 10-11 |
| | 2-3 | 2-4 | | | 2-3 |

| WEEK DATE | LECTURE TOPICS | LABORATORY TOPICS |
|-------------------|---|---------------------------|
| 1 Jan.12-16 | What is Plant Body chap. 1 | Angiosperms |
| 2. Jan. 19-23 | Nature of Life chap. 2 (19 th ,holoiday) | Seeds |
| 3. Jan.26-30 | Cells chap. 3 | Microscope Ex. 1 |
| 4. Feb.2-6 | Tissues chap.4 | The Cell Ex. 2 |
| 5. Feb.9-13 | Roots and soils chap. 5 | Mitosis Ex. 3 |
| 6. Feb.16-20 | Stems chap..6 | Roots Ex. 4 |
| 7. Feb.23-27 | Leaves chap. 7 | Stems Ex.5 |
| 8. March1-5 | Flowers, Fruits, and Seeds chap.8 | Leaves Ex. 6 |
| 9. March 8-12 | Spring Vacation No classes | No Lab. |
| 10.March 15-19 | Plant Metabolism chaps 9&.10 | Plant propa&Cell Ex. 7& 8 |
| 11.March 22-26 | Growth chap.11 | Diffusion Ex.9 |
| 12.March29-Apr.2 | Meiosis and Alternation of chap.12 | Photosynthesis 10 |
| 13.April 5-9 | Genetics chap.13 | Respiration Ex. 11 |
| 14. April 12-16 | Evolution chap. 15. | Questions session |
| 15. April 19-23 | Classification chap .16. | Lab. Final |
| 16.April 26 -27 | Last Day of Classes & Reading Day | |
| 17. April29-May 3 | FINAL EXAMINATION PERIOD | |

Text book for lecture : Introductory Plant Biology by Kingsley R. Stern

Lab. Manual: Introductory Plant Biology Lab. Manual by Kingsley R. Stern

SCHOOL OF ENGINEERING, SCIENCE AND TECHNOLOGY
DEPARTMENT OF LIFE SCIENCES
BIOL.114: General Botany
Lecture and Laboratory

Knowledge:

1. Safety in botany laboratory is a single most important concern to be observed by the student. The students will be using chemicals such as Sodium Fluoride, potassium hydroxide, acetone, and Sodium hydroxide that could pose danger to the students.
2. Student will be able to describe different areas of specialization in botany.
3. Students will be able to learn the language of botany by memorization the terms.
4. Students will be able to recognize the importance of relationship between plants and animals.
5. Students will be able to name different types of cells and tissues. .
6. Students will be able to know the developmental processes in plants.
7. Students will be able to learn the genetic principles and evolutionary process in plants.
8. Students will be able to read about electromagnetic radiation and energy transformation.
9. Students will be able to identify the historical personalities of botany.
10. Students will be able to recognize the influences of plant hormones and external factors on plant development
11. Students will be able to learn about the major terrestrial biomes in the world.

Skills:

1. Students will be able to locate botanical information through internet, biological abstracts, and journals
2. Students will be able to differentiate between monocotyledons and dicotyledons.
3. Students will be able to learn the different parts of the plant.
4. Students will be able to interpret the data collected during the experiments.
5. Students will be able to translate the collected data into graphs, tables, and charts.
6. Students will be able to demonstrate the ability to write the scientific report.
7. Student will be able to estimate the qualitative and quantitative measurements.
8. Students will be able to locate different biomes on the world map.
9. Students will be able to recognize organic molecules present in plant tissues by chemical analysis.

Abilities:

1. Students will be able to use the available microscopes in the botany laboratory.
2. Students will be able to sketch the diagrams of the botanical organisms(plants)
3. Students will be able to classify the plants into different categories.
4. Students will be able to apply the botanical knowledge in the use of plants.
5. Students will be able to discriminate between different groups of plants.
6. Students will be able to report the outcome of the experiments.
7. Students will be able to demonstrate the use of plants as food material.
8. Students will be able to solve genetic problems using plant's examples.
9. Students will be able to draw the sketches of male and female sex organs in different groups of plants.
10. Students will be able to learn the major metabolic pathways, and developmental processes.

