Course Title: Botany (The Biology of Plants)
Catalog #: BIO 111 Blended/Hybrid Online
Lab / Lecture: Monday~ 11 am – 1:45 pm

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Lab: Handouts available in class

Objectives of the Course:
- To familiarize the student with the characteristics of the major divisions of the plant kingdom, their evolutionary significance and classification of members.
- To provide the student with an understanding of the gross morphology, anatomy and physiology of representatives of the major plant groups with emphasis on the vascular plants using living material from the Eastern Campus Botanical Center.
- To enable the student to become familiar with the characteristics and significance of bacteria, protists and fungi and relationship with the plant kingdom and provide opportunities to observe them through the microscope.
- To understand the life cycles of typical plants and become familiar with their means of reproduction, reliance on other species and their manipulation to serve human needs.
- To be able to use a plant key and live specimens where available and become familiar with some of the local native species by studying the ecology of our local pine barrens and oak forest communities.
- To provide a background that will enable students to pursue more advanced work in the biological sciences and utilize the scientific method in developing experimental design.
- To provide the student with a basic knowledge of plant biology that will enable them to understand the rationale for certain horticultural practices used in landscaping, farming and gardening.
- To gain an appreciation of the diversity of the members of the Plant Kingdom and their significance to our civilization and life on this planet by studying a
variety of economic crops in the campus greenhouses. To understand plant propagation, growth and adaptations through "hands-on" activities which includes work the campus greenhouse and on the grounds.

Procedures:
In class as well as internet learning will be an integral part of the course. Time devoted using both methodologies will be divided between lecture and lab type course content. Where problems prevent students from completing assignments because of the understanding of internet course content, these issues will be addressed during class. Individual students should seek assistance with internet operational problems or the "desire2learn" platform issues outside of class during office hours or by contacting computer resource personnel.

This course requires considerable self-motivation. Students are expected to spend considerable time each week outside of class and on the internet completing lecture and lab assignments, participating in weekly online discussions and completing weekly quizzes.

Classroom lectures, blackboard sketches and digital images will supplement and clarify material presented in the text and online lectures. There will be assigned readings in the textbook.

Field trips will supplement classroom lectures and provide the opportunity for students to directly observe and study local plant communities.

Labs will provide opportunities to work with living and preserved plant materials from the campus collections and will include microscopic examination of these materials.

Lab investigation and experimentation will help demonstrate the scientific method and will be written up each week as one of your weekly online investigations.

There is a vast amount of plant resources on the internet; some of which we will be making extensive use of during the semester.

There will be considerable opportunity for class discussions, students are encouraged to participate and ask questions including mandatory online discussions.

The campus greenhouses and grounds will be utilized to provide “hands-on” experience with plant materials.

This is a blended course. The student is expected to complete much of the course content which is assigned on the online learning "Virtual Campus" Bio 111 Course Page which you will have to log onto using your Suffolk Community College Student Account. Your accounts are password protected.

Attendance:
Unless notified by the student, the instructor may withdraw a student after he/she has missed 2 consecutive class sessions or has not participated online within one 7 day period.
We meet for a limited time only once each week. Chronic lateness to class as well as chronic leaving and returning to class once the sessions begin is considered disruptive and will not be tolerated. Use of the cell phone and other electronic devices is not acceptable in the classroom unless the instructor is informed verbally or authorizes such use. Students are expected to stay for the entire class or until excused by the instructor.

It is important for students to attend every "in-class" session since most of the laboratory component offering a "hands-on" approach to learning will be conducted during our Monday meetings. Such lab opportunities offers the ability to collaborate with others and to gain background for the online component of the course which will be missed and difficult if not impossible to make up in you're not present.

Some assignments will be completed in class, there will be important handouts given during class, there will be some lecturing and details that may help to clarify online assignments will be explained at those times; If any classes are missed for any reason, it is the responsibility of the student to get in contact with a classmate to review material or the instructor prior to the next class.

How You Will Be Evaluated:

Your final grade in this course will be determined by the following:
1. Weekly Online Quizzes
   ..........30%
2. Investigations Online and In Class
   ..........20%
4. Quality of Weekly Online Participation and Discussion
   ..........10%
3. Midterm and Final in class exams (both must be taken). Each exam will include a lecture and lab component.
   ..........40%

Total: 100%

Tentative Schedule of Topics (depending on availability of plant material topics may be rearranged)
Week 1 
1/25

Week 2 
2/1
Ch. 3, Ch. 9  Introduction to the Plant Cell  Autotrophs and Heterotrophs Botany Lab:  Soils and Nutrition and Seed Germination;  A Simple Experiment Working with Plants in the Greenhouse and Field

Week 3 
2/8
Stems and Leaves  Ch. 6 and 7  Propagation of Fern (spores) and Fungi (spores) Botany Lab:  Leaf and Stem Morphology and Terminology Conclusion of Germination Experiments

Week 4 
2/15
Lab does not meet on Monday, 2/15; Mid Winter Recess NO LAB The Chemistry of Life Carbohydrates, Lipids and Proteins

Week 5 
2/22
Ch. 10  Photosynthesis and Respiration  The Leaf:  Ideal Solar Collector

   BOTANY LAB:  LEAF OBSERVATIONS. PHOTOSYNTHESIS AND RESPIRATION

Week 6 
3/1
Ch. 6, 9 Morphology of A Typical Flowering Plants:  Bean and Corn Diffusion and Osmosis in Plants Ch.3 Botany Lab:  Microscope Observations-  Plant Cells and Tissues

Week 7 
3/8
Sexual and Asexual Reproduction in Plants
Tissue Culture (cloning)

Ch. 14

**Lab:**  Plant Propagation  Working with Plants in the Greenhouse and Field

**Week 8**
3/15

**Midterm Exam and Practical Exam I**

**Week 9**
3/22

Ch. 8  The Flower, Pollination Strategies, Plant Breeding

**Lab:**  Observations:  Flower Structure

**Working with Plants in the Greenhouse and Field**

**Week 10**
NO LAB
3/29; Spring Recess

Lab does not meet on Monday, 3/29; Spring Recess

...CONTINUE WITH ONLINE WORK

Seeds and Seed Germination

**Week 11**
4/5
Nov. 9  Ch 9  Water movement in plants, tropisms  **Botany**

Lab:  Classification of Dry and Fleshy Fruit
Week 12 4/12
Mitosis and Meiosis  Nucleic Acids Ch. 2, 13  Root Tip
Mitosis and Apical Meristems Ch. 11
Lab:  Plant Growth,  Reproduction and Life Cycles
Continuation of "Lesser" Kingdoms

Week 13 4/19
Evolution and Genetics Ch. 13, 14, 15  Ch. 20, 21  Bryophytes and Pteridophytes  Alternation of Generations Ch. 12

Lab:  Microscope Observations:  Roots Ch. 5

Week 14 4/26
Ch. 4, Ch. 11  Herbaceous
Angiosperms:  Monocot and Dicot Stem  Ch 6, Ch. 9

Microscope Observations:  Herbaceous
Stems  Lab:  Stems and Water/Nutrient Transport in Plants

Ch.22, 23  Angiosperms and Gymnosperms
Economic Plants, Ch. 24
Ch. 6  Lab:  Microscope Observations:  Woody Stems

Week 15 5/3
Ch. 25, 26  Ecology and Biomes

Lab: Chemical Testing

Week 16
5/10  Analysis: Products of Photosynthesis  Paper
Chromatography: Analysis of Plant Pigments

Week  Final Exam and Lab Practical II
17

5/17