

**Mercer County Community College**  
**Science and Health Professions Division**  
**OHT 101 – Plant Science**  
**Course Outline**  
**Fall 2007**

**Credits:** 3  
**Lecture Hours:** 2  
**Laboratory Hours:** 2

**Lecture Instructor:** Amy E. Iseneker, Assistant Professor  
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**Lab Instructor:** Marie Wszolek  
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**Required Text:** *Horticulture Principles and Practices*, 3<sup>rd</sup> Edition; G. Acquaah

**Optional Text:** *Plant Biology*, 2<sup>nd</sup> Edition; Rost, Barbour, Stocking and Murphy

**Catalog Description:** An introduction to plant science: basic botany, plant physiology, plant growth, leaves, roots, fruits, flowers, cells, genetics, photosynthesis, and the plant kingdoms.

**Pre-requisites:** None

**Grading:** Grades will be based on the following point system:

Exam #1	150 points
Exam #2	170 points
Exam #3	100 points
Quizzes	120 points

Project	100 points
A & P	<u>120 points</u>
Total	760 points

### **Explanation of Point System:**

Exams – Will be given in lecture and are based on lecture material. Lecture exams are not cumulative. We reserve the right to re-test you if a grade received is not consistent with your normal performance. You must show up on-time to take your exams. If you are late to class to take an exam, and one of your classmates has already finished the exam and left the room, you will not be allowed to take it. In case of an emergency, you must call within 24 hours of the exam in order to do a make-up.

A & P (Attendance and Participation) – Each week, you will earn a total of 8 points for attendance and participation for lecture and lab. You will lose points if...

- You show up to lecture late (-2)
- You show up to lab late (-2)
- You come back from the break late (-2)
- You leave before the lecture has been completed (-2)
- You leave before the lab is completed – this includes clean-up (-2)
- You show up to lab without the proper foot wear (-14)
- You are continuously disruptive to the classroom atmosphere
- Your cell phone goes off during lecture or lab

Lab Quizzes – Quizzes will be given in lab and will cover material from the previous lecture and lab. Each quiz is worth 20 points and will be given at the beginning of lab. You will not be given extra time to complete the quiz if you show up late and no make-up quizzes will be given. The lowest quiz grade will be dropped at the end of the semester.

Lab Project – There will be one lab project given at the beginning of the semester which will require you to select a plant that you are interested in. The project will combine plant propagation research and skills with an understanding of plant growth in various areas or

zones, and how an individual plant reacts to different stimulus (light, soil, water, etc.). The project must be typed, turned in on-time (it is not accepted late), and presented by the due date. There is a 10 point deduction if you do not type it and a 30 point deduction off your semester total if you do not present it. On the day of the presentation, you must show up to lab on time or you will face a one point deduction for every minute you are late. Please include a bibliography with at least 3 resources (do not rely just on the internet). A paper without the bibliography will result in a grade of "0". Any exceptions to these guidelines must be discussed one month prior to the project due date.

### Grading Rubric for Project (paper only, not presentation)

#### Research Component – 20 points

- Basic Information on the Plant to include:
  - Latin Name and Common Name
  - Growth Requirements for the Plant
  - Plant Propagation Techniques

#### Growth Manipulation Component – 30 points

- ✓ You must manipulate the growth requirements of the plant and document them in your paper to include what the change was and how the plant reacted to the change.
  - Growth requirements can include light, fertilization, pruning, water, etc.

#### Plant Propagation Component - 30 points

- ✓ You must propagate the plant and document your results.
  - Score partially based on level of creativity and difficulty.

#### Overall Clarity – 20 points

- ✓ Your paper must read well and be easy to understand because it is a summary of what you have done. You want the reader to be able to clearly understand the progression of your project.
- ✓ You must hand in your journal entries along with your paper.

Statement of Academic Integrity - *“Any student who a) knowingly represents the work of others as his/her own. B) uses or obtains unauthorized assistance in the execution of any academic work, or c) gives fraudulent assistance to another student is guilty of cheating. Violators will be penalized in accordance with established college policies and procedures.”* – If you are caught cheating in this course,

you will receive a 0 for the assignment, and you will be turned in to the Academic Integrity Committee.

Cell Phone Policy - Cell phones must be turned off during lab and lecture unless you have permission to leave them on. If they go off and you do not have permission, you will lose 5 points off from your semester total for every occurrence.

Lab Dress Code - You **must** wear sturdy shoes for lab. This means no open toe shoes, sandals or flip-flops.

Behavior Statement - I encourage participation in my course. I enjoy you asking questions and sharing your experiences. I, however, will not tolerate any of the following behaviors in my course. These behaviors will result in your dismissal from class for the day.

- Physical or Verbal Threatening Behavior or Derogatory Remarks Towards the Instructor and/or Fellow Classmates
- Using Cell Phones During Class (including text messaging)
- Carrying on Side Conversations

Mercer's Grading System:

A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	70-76
D	60-69
F	0-59

**Course Objectives:**

1. Sharpen the student's understanding of plant growth and development.
2. Provide the student with sufficient information on plant anatomy to enable them to make appropriate decisions regarding the growth and care of plants.

3. Provide the student with a basic understanding of soil composition and the influence soil amendments have on plant growth.
4. To instill in the student a basic understanding of plant processes and metabolism.
5. Provide the student with background information that will encourage an understanding on the entire process of how plants reproduce and grow.
6. To develop within the student a practical approach to the management of water in soils and growing media.
7. Provide the student with the introductory knowledge of what is involved with basic plant identification.
8. Provide the student with the means to successfully grow and propagate a plant.
9. To introduce careers within the field of plant science to students.

**Behavioral Objectives:**

1. Recognize plant parts.
2. Understand how various plant parts work.
3. Understand the plant cycle as it moves from seed to fruit.
4. Recognize and know the common and scientific names of some common woody and herbaceous plants, potted plants, and plant pests found in routine ornamental horticulture operations.
5. Explain concepts such as why leaves on deciduous plants turn color before they drop in the fall.
6. Identify and use various methods of plant propagation.
7. Demonstrate how to correctly plant seeds, plants and bulbs.
8. Demonstrate how to water and fertilize properly.
9. Understand plant processes such as photosynthesis, respiration and reproduction.

## **Tentative Schedule:**

### Week 1:

Lecture – Course Introductions, Plant Basics, Plant Classification

Lab – Lab Orientation, Project Guidelines

Readings – Acquaah Chapter 2; Rost Chapters 1 and 2; Leaf and Flower Morphology Hand-out

### Week 2:

Lecture – Video – “Introduction to Botany”

Lab – Quiz #1, Plant Part Scavenger Hunt

Readings – None

### Week 3:

Lecture – Plant Cycle: Seed to Flower, Pollination, Photo Responses

Lab – Field Trip to Pennsbury Manor (9/12)

Readings - Acquaah Chapter 3; Rost Chapters 12 - 15

### Week 4:

Lecture – Video – “Sexual Encounters of the Floral Kind”, Plant Propagation

Lab – Quiz #2, Start Project (come prepared with research); Transplanting and Division of Interior Plants; Pruning for Auxins and Cytokinins; Cutting Propagation

Readings - Acquaah Chapters 10 and 11; Rost Chapters 12 - 15

### Week 5:

Lecture – Plant Propagation, Tissues and Plant Growth

Lab – Quiz #3, Grafting and Layering

Readings - Acquaah Chapters 3 and 4; Rost Chapter 4

### Week 6:

Lecture – Exam #1

Lab – Project Work (propagate plant)

Readings - None

Week 7:

Lecture – Hormones and Inhibitors

Lab – Examine Pruned Plants for Auxin and Cytokinin Action;

Project Work (manipulate plant)

Readings - Acquaah Chapter 5; Rost Chapter 8

Week 8:

Lecture – Cell Structure and Function

Lab – Field Trip to Sesame Place (10/17)

Readings - Acquaah Chapters 3 and 5; Rost Chapter 3

Week 9:

Lecture – Genetics, Climate in Relation to Plant Growth

Lab – Quiz #4, Project Work

Readings - Acquaah Chapters 4 and 6; Rost Chapter 16

Week 10:

Lecture – Roots

Lab – Quiz #5, Root ID

Readings - Acquaah Chapter 3; Rost Chapter 7

Week 11:

Lecture – Exam #2

Lab – Bulb Planting

Readings - None

Week 12:

Lecture – Leaves

Lab – Project/Presentation Due (11/14)

Readings - Acquaah Chapter 3; Rost Chapter 6

Week 13:

Lecture – TBA

Lab – No Lab – Happy Thanksgiving

Readings - None

Week 14:

Lecture – Stems and Transport

Lab – Quiz #6, Leaf Lab

Readings - Acquaah Chapter 3; Rost Chapter 5 and 11

Week 15:

Lecture – Photosynthesis and Respiration

Lab – Quiz #7; Wrap-up and Clean-up

Readings - Handouts; Rost Chapters 9 and 10

Week 16:

Lecture – Exam #3

Lab – TBA

Readings - None