CENTRAL TEXAS COLLEGE
SYLLABUS FOR AGRI 1407
AGRONOMY
Semester Hours Credit: 4

INTSTRUCTOR:

OFFICE HOURS:

I. INTRODUCTION

A. Agronomy is the theory and practice of field crop production and soil management. Field crop production and soil management are closely related and basic to all areas of agriculture. Classification and distribution of farm crops, their use, production, and identification will be studied with emphasis being placed on those crops important to Texas. Studies will also include crop improvement technology, value of rotation, weed/pest/disease management, and use/need of fertilizer, which will be determined by soil testing in the laboratory of the course. Laboratory work will also include practical use of tillage and harvesting equipment by student participation in actual crop production.

B. This course is required for the Horticultural Development Specialization – Associate in Applied Science degree program, the Agriculture Science – Associate in science Degree, as well as the Agriculture Technology Certificate of Completion program.

C. A thorough understanding of crops and crop production is necessary for anyone working in production agriculture occupations. This is necessary because plants have different requirements of temperature, moisture, sunshine, soil type, fertilizer, disease, and insects, etc.

D. Prerequisite(s): None.

II. LEARNING OUTCOMES

Upon completion of the course, Agronomy, the student will be able to:

A. List factors affecting crop adaptation and distribution. C5, C6, F1, F2

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B. Demonstrate their knowledge of crop production by growing a crop in the field. C1, C2, C3, C9, F9, F13, F16, F17

C. Label the parts of the seed and plan and give their function in plant growth. C5, C6, F1, F2, F5, F12

D. Identify field crop seed of major importance in the U.S. C5, F1, F2

E. List the recommended cultural practices for producing the major agricultural crops. C3, C5, C18

F. Demonstrate ability to gather technical information, assemble it into a professional paper and present it to a group of peers. C3, C5, C6, C7, C8, F1, F2

III. INSTRUCTIONAL MATERIALS

The instructional materials identified for this course are viewable through www.ctcd.edu/books

IV. COURSE REQUIREMENTS

A. Reading Assignments: Will be made to coincide with class lectures and activities. Information from the assigned reading will be important material for exams.

B. Term Report: Will be assigned in a form that will coincide with coursework, student interest as well as the practical value of the information to the agriculture industry. The report will be graded as a major exam and failure to complete the report will result in a grade of zero.

C. Class Performance: Work to be turned in for a grade that is missed due to an excused absence may be made up on the student’s time and at the convenience to the instructor. Work, including exams, missed due to an excused absence, must be made up before the second class meeting after the student returns to class. Students absent will be responsible to get class notes missed from another student or from the textbook. Any work and exams not made up will be assigned a grade of zero.

D. Daily Class Work: Class work assignments will be made periodically throughout the semester. These will be averaged and counted as an exam grade.
V. EXAMINATIONS

Three major exams excluding the final will be given. The first is to be given about the fifth week, the second about the tenth week, the third during the fifteenth week. The exams will be mainly objective type, to be graded by the instructor and returned to the student. At review will be given prior to the final exam. Procedure for taking make-up exams was given in Class Performance above.

VI. SEMESTER GRADE COMPUTATIONS

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
<th>Grade Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>First major exam</td>
<td>100</td>
<td>900 - 1000 = A</td>
</tr>
<tr>
<td>Second major exam</td>
<td>100</td>
<td>800 - 899 = B</td>
</tr>
<tr>
<td>Third major exam</td>
<td>100</td>
<td>700 - 799 = C</td>
</tr>
<tr>
<td>Term Report</td>
<td>100</td>
<td>600 - 699 = D</td>
</tr>
<tr>
<td>Class Work</td>
<td>150</td>
<td>0 - 599 = F</td>
</tr>
<tr>
<td>Laboratory</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Final Exam</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td></td>
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</tbody>
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VII. NOTES AND ADDITIONAL INSTRUCTIONS FROM INSTRUCTOR

A. Course Withdrawal: It is the student’s responsibility to officially withdraw from a course if circumstances prevent attendance. Any student who desires to, or must, officially, withdraw from a course after the first scheduled meeting must file a Central Texas College Application for Withdrawal (CTC Form 59). The withdrawal form must be signed by the student.

CTC Form 59 will be accepted at anytime prior to Friday of the 12th week of classes during the 16-week fall and spring semesters. The deadline for sessions of other lengths:

- 10-week semester: Friday of the 8th week
- 8-week semester: Friday of the 6th week
- 5-week semester: Friday of the 4th week

The equivalent date (75% of the semester) will be used for sessions of other lengths. The specific last day to withdraw is published each semester in the Schedule Bulletin.

A student who officially withdraws will be awarded the grade of “W”, provided the student’s attendance and academic performance are satisfactory at the time of official withdrawal. Students must file a withdrawal application with the college before they may be considered for withdrawal.
A student may not withdraw from a class for which the instructor has previously issued the student a grade of “F” or “FN” for nonattendance.

B. **Administrative Withdrawal:** An administrative withdrawal may be initiated when the student fails to meet College attendance requirements. The instructor will assign the appropriate grade on CTC Form 50 for submission to the registrar.

C. **Incomplete Grade:** The College catalog states, “An incomplete grade may be given in those cases where the student has completed the majority of the coursework, but, because of personal illness, death in the immediate family, or military orders, the student is unable to complete the requirements for a course…” Prior approval from the instructor is required before the grade of “I” for Incomplete is recorded. A student who merely fails to show for the final examination will receive a zero for the final and an “F” for the course.

D. **Cellular Phones and Beepers:** Cellular phones and beepers will be turned off while the student is in the classroom or laboratory.

E. **American’s With Disabilities Act (ADA):** Disability Support Services provide services to students who have appropriate documentation of a disability. Students requiring accommodations for class are responsible for contacting the Office of Disability Support Services (DSS) located on the central campus. This service is available to all students, regardless of location. Explore the website at [www.ctcd.edu/disability-support](http://www.ctcd.edu/disability-support) for further information. Reasonable accommodations will be given in accordance with the federal and state laws through the DSS office.

F. **Instructor Discretion:** The instructor reserves the right of final decision in course requirements.

G. **Civility:** Individuals are expected to be cognizant of what a constructive educational experience is and respectful of those participating in a learning environment. Failure to do so can result in disciplinary action up to and including expulsion.

**VIII. COURSE OUTLINE**
A. Lesson One: Historical Development and Distribution

1. **Learning Outcomes:** Upon successful completion of this unit, the student will be able to:
   a. Describe the origin of a major crop.
   b. Explain the projected world food and fiber deficiency problems.
   c. List the factors that restrict crop production.
   d. List the major crop producing areas in the United States.

2. **Learning Activities:**
   a. The instructor will discuss the origin and development of the major food and fiber crops.
   b. The student will read and outline the factors that restrict crop production areas.
   c. On a map of the United States, the student locates the areas where the major crops are produced.

3. **Equipment and Materials:** Maps of the United States

4. **Lesson Outline:**
   a. Agricultural Beginning
   b. World Production and Distribution
   c. Production and Distribution in the United States

B. Lesson Two: Plants Classification, Structure, and Growth

1. **Learning Outcomes:** Upon successful completion of this lesson, the student will:
   a. Identify plants according to their use.
   b. Describe the method of identifying plants by the botanical classification system.
   c. Identify the parts of the plant and their function in growth.

2. **Learning Activities:**
   a. Classroom lecture/discussion
   b. Student homework practice
   c. Reading assignments
3. **Equipment and Materials:** Instruction materials includes list of agronomic plants to be classified and a drawing of plant with parts identified.

4. **Lesson Outline:**
   a. The Field Crops of Most Economic Importance
   b. Minor, Less Important Crops
   c. Crops Classified
   d. Parts of the Plant
      (1) Root system
      (2) Stem and leaves
      (3) Flower and fruits
      (4) Plant growth

C. **Lesson Three:** Soil, Water, and Nutrients

1. **Learning Outcomes:** Upon successful completion of this unit, the student will be able to:
   a. List the function of water in plant growth.
   b. Discuss the importance of soil to plants.
   c. List the major, minor, and trace minerals required by plants.
   d. Perform simple soil and plant tissue analysis.

2. **Learning Activities:**
   a. Classroom lecture/discussion
   b. Observe plants and photos of plants with nutrient and water deficiencies

3. **Equipment and Materials:**
   a. Instructional materials include plants growing in the lab with deficiencies
   b. Textbook
   c. Test Kits

4. **Lesson Outline:**
   a. Functions of Water
   b. Importance of Soil and Its Composition
   c. Nutrient Requirements
   d. Soil and Tissue Analysis

D. **Lesson Four:** Soil and Water Conservation
1. **Learning Outcomes:** Upon successful completion of this lesson, the student will:
   
a. List the practices recommended for conserving soil.
b. Describe methods of conserving water in farming.

2. **Learning Activities:**
   
a. Classroom lecture/discussion
b. Guest lecturer
c. Field trip and slides

3. **Equipment and Materials:** Slides on soil and water conservation and the textbook.

4. **Lesson Outline:**
   
a. Soil Conservation
   
   (1) Crop rotation
   
   (2) Cover crops
   
   (3) Terracing
   
   (4) Waterways

b. Water Conservation
   
   (1) Cover crops
   
   (2) Minimum tillage

E. **Lesson Five:** Preparation of Soil

1. **Learning Outcomes:** Upon successful completion of this lesson, the student will:
   
a. Discuss the methods of seed bed preparation.
b. List the equipment required for preparing soil.
c. List the schedule recommended for preparation of soil.
d. Discuss the advantages and disadvantages of chemical versus mechanical weed control.

2. **Learning Activities:**
   
a. Classroom lecture/discussion
b. Field trip

3. **Equipment and Materials:**
   
a. Tractor and implements
b. Textbook
Lesson Outline:

a. Methods of Preparing Soil
b. Equipment Used
c. Schedule- Time of Year
d. Chemical Weed Control

F. Lesson Six: Seed Germination and Plant Growth

1. **Learning Outcomes:** Upon successful completion of this lesson, the student will:
   
a. Explain the process of seed germination.
b. List the steps in the germination process.
c. List the requirements for germination and plant growth.

2. **Learning Activities:**
   
a. Classroom lecture/discussion
b. Germinating seed in laboratory

3. **Equipment and Materials:**
   
a. Corn
b. Bean seed
c. Planting media

4. **Lesson Outline:**
   
a. Seed Germinating Process
b. Seed Testing- Quality
c. Federal Seed Law
d. Plant Growth
e. Conditions Necessary for Plant Growth

G. Lesson Seven: Plant Breeding and Improvement

1. **Unit Objective:** Upon successful completion of this lesson, the student will:
   
a. List the reproductive parts of a plant and their function.
b. Explain how improvement is made through breeding and selection.
2. **Learning Activities:**
   
a. Classroom lecture/discussion  
b. Textbook reading assignments  

3. **Lesson Outline:**
   
a. Heredity in Plants- Genetics  
b. Pollination and Fertilization  
c. Methods of Breeding Plants  

H. **Lesson Eight:** The Major Agronomic Crops

1. **Unit Objective:** Upon successful completion of this lesson, the student will:
   
a. List the major economic crops.  
b. Explain the practices required to produce the crops.  
c. Discuss the means of controlling insects and diseases of each crop.  

2. **Learning Activities:**
   
a. Classroom lecture/discussion  
b. Each student will be assigned one crop to research and report about, both orally and in writing  

3. **Lesson Outline:**
   
a. Crops of most economic importance in the United States- one assigned to each student 
   
b. Give outline for report to include the following:  
   
   (1) Common name  
   (2) Scientific name  
   (3) Uses of crop  
   (4) Where produced  
   (5) Climatic adaptation  
   (6) Soil adaptation  
   (7) Cultural practices  
   (8) Other interesting information