

AGRN 1000 - Basic Crop Science
Spring Semester, 2008

Instructor - David Weaver

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Office hours - 1:00 - 2:00 MTHF (these are official, but feel free to visit anytime I am in)

Lecture time and location: 246 Funchess, 11:00 am MWF

Lab time and location: 203 Funchess, 1:00 (section A) or 3:00 (section B) pm Wednesdays

Textbook - Introductory Crop Science, fifth edition, by Waldren + handouts. Textbook is not required, but highly recommended as supplemental reading material.

Lab Manual is available and downloadable from Blackboard. Lab Manual is required.

Course goals: To help students learn and understand

- 1) how and why crops grow
- 2) why crops are important
- 3) how crops affect the environment
- 4) how the environment affects crops
- 5) learn simple agronomic calculations
- 6) historical and future aspects of crop production

Prerequisites: None

GRADING POLICY

| | |
|-----------------------------------|----------------|
| 3 exams during semester @ 100 pts | = 300 pts |
| 1 final exam @ 100 pts | = 100 pts* |
| Lab grade | = 200 pts |
| Lab Homework (5 @ 5 pts) | = 25 pts |
| Experiment 1 Report | = 20 pts |
| Experiment 2 Report | = 20 pts |
| Experiment 3 Report | = 20 pts |
| Crop Seed ID Exam | = 20 pts |
| Weed ID Exam | = 20 pts |
| Midterm Lab Quiz | = 25 pts |
| Final Lab Quiz | = 25 pts |
| <u>Lab entrance Quizzes</u> | = 25 pts |
| Total Lab Points | = 200 pts |
| Office visit | = <u>2</u> pts |
| Total | = 602 pts |

Grades will be assigned according to the following total point accumulations:

| | |
|-------------------|-----|
| 540-602 pts (90%) | = A |
| 480-539 pts (80%) | = B |

| | |
|-------------------|-----|
| 420-479 pts (70%) | = C |
| 360-419 pts (60%) | = D |
| 359 pts (<59%) | = F |

*In lieu of taking the final exam, you can read and prepare a report on the book “The Worst Hard Time: The Untold Story of Those Who Survived the Great American Dust Bowl” by Timothy Egan. Available on Amazon.com at around \$15. This will also require a face-to-face interview with me on the books contents. Grade on report and interview will be substituted for final exam grade.

Students who need special accommodations (as identified by The Program For Students with Disabilities) please see me for an appointment as soon as possible.

IMPORTANT POINTS:

Regular class attendance is expected. Roll will be taken daily, just as an assessment of your progress in class. You cannot do well in this class if you do not attend regularly. If you have a problem getting to class for some good reason, come talk to me about it.

No make-up exams will be given without a valid excuse. Valid excuses are those recognized by the University (illness, death in family, court appearance, religious holidays, university-related trips, and others deemed appropriate by me). You must contact me *prior to* the exam if circumstances cause you to miss an exam for any reason. All such excused absences are subject to verification. Make up exams will be given within 10 days of the original exam date. If you have three exams in one day, *do not* ask me to move your exam to a different time, just study.

All lab assignments must be turned in *on time*. Grades on lab reports will be reduced by 20% for each day late, and *credit will not be guaranteed*. Again, only an official or doctor's excuse will get you out of this one. A detailed schedule of assignments and due dates is given below, and another copy is included in your lab manual.

Handouts for labs and other subjects to be covered will only be given out in class *one time*. If you are not there that day, get the material from one of your classmates. Excused absences are again the only exception. This policy also applies to exams, homework, and lab reports that are being returned after being graded. If you do not show up for class or come by my office to retrieve these materials within 24 hours, they go in the trash.

Class announcements (schedule changes, grading announcements, updates, etc.) are frequently made by email. Please check your email regularly so that you don't miss any important information.

Adult behavior is expected at all times. Do not talk or carry on side conversations during lecture. Turn off cell phones during lecture. Being a disruption during lecture will cause you to be dismissed from class.

Textbook can be an excellent study guide. Each chapter has a list of questions following it. If you cannot answer the questions at the end of each chapter, you are not ready for the exam.

Do the best that you can in this course. If you feel you may fall short of a particular grade by a few points even if you do well on the final, *don't blow it off*. Usually I look for breaking points when assigning grades, and may drop down below the cutoff point for a particular grade.

Lab will meet in room 203.

If you do not officially drop this class, in effect you are agreeing by the terms spelled out in the syllabus.

Exam schedule: First exam Wednesday, February 14
 Second exam Wednesday, March 14
 Spring Break, March 26 - April 1
 Third exam Monday, April 23
 Final exam Wednesday, May 2, 11:00-1:30 p.m.

Old exams, PowerPoint presentations, a copy of this syllabus and other course materials are on Blackboard.

Table of assignments and due dates:

| Date | Assignment | Type | Points | My score |
|---------------|-----------------------------------|---------------------|------------|----------|
| Wed, Jan 23 | Review questions, pg 19 | Homework | 5 | |
| Mon, Feb 11 | Fertilizer calculations, pg 273 | Homework | 5 | |
| Wed, Feb 13 | First Exam | Lecture Exam | 100 | |
| Mon, Feb 18 | Seeding rate problems, pg 274 | Homework | 5 | |
| Wed, Feb 27 | Mid-term Lab Quiz | Lab Quiz | 25 | |
| Fri, Feb 29 | Nutrition Lab report | Lab Report | 20 | |
| Mon, March 3 | Inflorescences worksheet, pg 223 | Homework | 5 | |
| Fri, March 7 | Seed germ Lab report | Lab Report | 20 | |
| Wed, March 12 | Second Exam | Lecture Exam | 100 | |
| Mon, March 31 | Pesticide applic problems, pg 282 | Homework | 5 | |
| Mon, April 7 | Growth Regulation Lab report | Lab Report | 20 | |
| Wed, April 9 | Seed and Weedy Plant ID Exam | Lab ID Exam | 40 | |
| Mon, April 20 | Third Exam | Lecture Exam | 100 | |
| Wed, April 23 | Final Lab Quiz | Lab Quiz | 25 | |
| Fri, May 2 | Final Exam - 9:00 am | Lecture Exam | 100 | |
| | Lab Entrance Quizzes * | | 25 | |
| | | Total Lab | 200 | |
| | | Total Lecture | 400 | |
| | | Total Points | 600 | |

* Entrance Quizzes will be given before 6 labs. Each quiz will be worth 4 points, with one quiz having a bonus point, totaling 25 points. The quizzes will be taken from the written laboratory instructions in the lab book and the reading material assigned prior to each laboratory.

The Auburn University Oath of Honor

“In Accordance with those virtues of Honesty and Truthfulness set forth in the Auburn Creed, I, as a student and fellow member of the Auburn Family, do hereby pledge that all work is my own,

achieved through personal merit and without any unauthorized aid. In the promotion of integrity, and for the betterment of Auburn , I give honor to this, my oath and obligation.”

BASIC CROP SCIENCE
AGRN 1000
Course outline

Instructor: David B. Weaver

I. HISTORY OF AGRICULTURE AND IMPORTANCE IN TODAY'S WORLD

- A. Definition of a Crop
- B. Pre-agricultural Procurement of Food
- C. Origins of Agriculture
- D. Agricultural Revolution and its Consequences

II. HUMAN POPULATION DYNAMICS

- A. History
- B. Malthusian Concept
- C. World Population Growth

III. RESOURCES AVAILABLE FOR CROP PRODUCTION

- A. Land use and classification
- B. Land resources

IV. CLASSIFICATION AND STRUCTURE OF HIGHER PLANTS

- A. Agronomic and Use Classifications
- B. Taxonomic Classifications
- C. Morphology (roots, stems, leaves, flowers)
- D. Anatomy

V. PLANT GROWTH AND METABOLISM

- A. Photosynthesis
- B. Respiration
- C. Transpiration
- D. Translocation
- E. Light and temperature effects on crop growth

VI. SOILS

- A. Definition
- B. Composition
- C. Formation
- D. Properties
- E. Profile

VII. RAINFALL

VIII. WATER

- A. Properties
- B. Functions in Plant Growth
- C. Biological Importance of Water Stress
- D. Water Use Efficiency
- E. Management Practices to Increase Water Use Efficiency

IX. MINERAL NUTRITION AND FERTILIZERS

- A. Essential Elements and Their Discovery
- B. Functions of Essential Elements in the Plant
- C. Composition and Formulation of Fertilizers

X. TILLAGE AND CROPPING SYSTEMS

- A. Purposes of Tillage
- B. Tillage Methods
- C. Cropping Systems

XI. PESTS AND THEIR CONTROL

- A. Weeds
- B. Diseases
- C. Insects

XII. PLANT BREEDING

- A. Goals
- B. Methods

XIII. EVALUATION OF AGRICULTURAL PRODUCTS AND PRACTICES (Elementary statistics)

Individual Crop Emphasis:

XIV. CORN AND SORGHUM

- A. Origin and Botany
- B. Production
- C. Harvest
- D. Utilization

XV. PEANUT

- A. Origin and Botany
- B. Production
- C. Harvest
- D. Utilization

XVI. COTTON

- A. Origin and Botany
- B. Production
- C. Harvest
- D. Utilization

XVII. SOYBEAN

- A. Origin and Botany
- B. Production
- C. Harvest
- D. Utilization

IIXX. WHEAT AND SMALL GRAINS

- A. Origin and Botany
- B. Production
- C. Harvest
- D. Utilization

XIX. FORAGES

- A. Types
- B. Quality
- C. Production
- D. Utilization