I. TITLE:

Crop Physiology

II. CATALOG DESCRIPTION:

Basic principles of crop physiology; the effect of environment and management practice on physiological processes, growth and development of crops. Prerequisites: AGR 160 or 240.

*To receive graduate credit for this course, a student must be admitted to graduate studies prior to registering for the course.*

III. PURPOSE:

To enable students to better understand crop physiology, factors that alter physiological processes, and how better management may improve crop growth and yield.

IV. COURSE OBJECTIVES:

A. To understand how plant and environmental factors determine biological yield of dry matter.
B. To illustrate how yield is partitioned into useful and non-useful components and how man can influence this distribution.
C. To evaluate the impact of environmental stresses on economic yield and crop quality.
D. To explain the function and use of growth regulators in agricultural practice.
E. To discuss how knowledge of the plant’s response to its environment can have predictive value for production and for crop quality.

V. CONTENT OUTLINE:

A. Water and Plant Cells
B. Water balance of the plant
C. Mineral Nutrition
D. Phloem Translocation
E. Photosynthesis
F. Respiration
G. Stress Physiology
H. Yield analysis

VI. INSTRUCTIONAL ACTIVITIES:

A. Lecture
B. Videotapes
C. Slides
D. Discussions

VII. FIELD AND CLINICAL EXPERIENCES:

A. Class Projects
B. Lab experiments

VIII. RESOURCES:

See below

IX. GRADING PROCEDURES:

Three announced examinations of equal importance will be given during the semester. The final exam will draw on all of the knowledge gained during the semester. Additional reports on class experiments or projects will be required.

Grading: Three Regular Exams @ 100pts 300 pts.
Final Exam 150pts
Lab Experiments / Projects 150 pts

Grading Scale:

≥ 540 = A
≥ 480 = B
≥ 420 = C
≥ 360 = D
< 360 = E

The instructor reserves the right to lower this scale on a linear basis, as the need arises.

All graduating seniors will also be required to take the final exam.

X. ATTENDANCE POLICY:

Please refer to the most current copy of the Murray State University’s Undergraduate Bulletin and Graduate Bulletin.
XI. **ACADEMIC HONESTY POLICY:**

(Adopted by the MSU Board of Regents)

Cheating, plagiarism (submitting another person’s material as one’s own), or doing work for another person which will receive academic credit are all impermissible. This includes the use of unauthorized books, notebooks, or other sources in order to secure or give help during an examination, the unauthorized copying of examinations, assignments, reports, term papers, or the presentation on unacknowledged material as if it were the student’s own work. Disciplinary action may be taken beyond the academic discipline administered by the faculty member who teaches the course in which the cheating took place.

NOTE: The School of Agriculture Faculty have adopted and implemented an Academic Honesty Policy in addition to the University Honesty Policy, which can be found in the current *Undergraduate Bulletin and Graduate Bulletin*. The policy sets guidelines regarding acts of dishonesty and the procedure to follow should an event occur. It is each Agriculture student’s responsibility to obtain and read a copy of this document. The School’s Academic Honesty Policy can be obtained by asking for a copy from any Agriculture Faculty member or the Secretary.

XII. **TEXT AND REFERENCES:**

Text:

References:
- Journals in the library include:
  - Crop Science
  - Plant Physiology
  - Plant Cell

XIII. **PREREQUISITES:**

Agriculture 160 or 240

XIV. **STATEMENT OF AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY:**

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or
disability in employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities. For more information, contact Sabrina Y. Dial, Director of Equal Opportunity, Murray State University, 103 Wells Hall, Murray, KY 42071-3318. Telephone: 270-809-3155 (voice), 270-809-3361 (TDD).

XV. **MSU SCHOOL OF AGRICULTURE CELL PHONE POLICY**

The School of Agriculture recognizes that in today’s world cell phones are a familiar and often necessary form of communication for students.

It shall be the policy of the School that no cell phone usage shall be allowed in class and/or labs without the prior consent of the course instructor. This shall include verbal calling, incoming calls, email, text messaging, and use of cell phone calculators on tests and quizzes.

Cell phones must be kept off and out of sight (i.e. secured to a person’s belt or kept in a bag or purse away from desks and lab counters).

Should a student’s cell phone be visible, ring, or other form of unauthorized usage that is interruptive to the class or lab, the student may be asked to leave class and not return for that class/lab period.

Upon prior consent of the instructor, a student may obtain permission to have their phone on in case of an emergency or in critical family situations.

This policy also includes pagers and other electronic equipment such as blackberries and/or computers/laptops.