**BARTON COMMUNITY COLLEGE**

**COURSE SYLLABUS**

1. **GENERAL COURSE INFORMATION**

Course Number: AGRI 1139

Course Title: Concepts for Agriculture

Credit Hours: 3

Prerequisites: None

Division/Discipline: Workforce Training & Community Education/Agriculture

Course Description: This course will introduce students to an overview of the language, terms, mathematics, and scientific concepts commonly used in production agriculture and related industries.

1. **INSTRUCTOR INFORMATION**
2. **COLLEGE POLICIES**

Students and faculty of Barton Community College constitute a special community engaged in the process of education. The College assumes that its students and faculty will demonstrate a code of personal honor that is based upon courtesy, integrity, common sense, and respect for others both within and outside the classroom.

Plagiarism on any academic endeavors at Barton Community College will not be tolerated. The student is responsible for learning the rules of, and avoiding instances of, intentional or unintentional plagiarism. Information about academic integrity is located in the Student Handbook.

The College reserves the right to suspend a student for conduct that is determined to be detrimental to the College educational endeavors as outlined in the College Catalog, Student Handbook, and College Policy & Procedure Manual. (Most up-to-date documents are available on the College webpage).

Any student seeking an accommodation under the provisions of the Americans with Disability Act (ADA) is to notify Student Support Services via email at disabilityservices@bartonccc.edu.

1. **COURSE AS VIEWED IN THE TOTAL CURRICULUM**

A basic understanding of the language, terminology, basic math skills, and concepts from the natural sciences (physics, biology, chemistry, and climatology) is necessary for students preparing to work in production agriculture. This understanding is fundamental to the student’s ability to understand the concepts of courses in the agriculture curriculum and to apply and understand the new skills obtained within the curriculum. This understanding is also essential for the safety of the student in the workplace and for the general public.

1. **ASSESSMENT OF STUDENT LEARNING**

Barton Community College is committed to the assessment of student learning and to quality education. Assessment activities provide a means to develop an understanding of how students learn, what they know, and what they can do with their knowledge. Results from these various activities guide Barton, as a learning college, in finding ways to improve student learning.

Course Outcomes, Competencies, and Supplemental Competencies:

1. Define terms common in crop and animal production agriculture.

1. List and define common terminology and acronyms used in the following areas:

1. Animal agriculture.
2. Fertilizer management.
3. Crop protection.
4. Crop production.
5. Harvest and grain/forage handling.
6. Interpret common agriculture units of measurement.

1. List and define units of measurement in the following areas:

1. Fertilizer.
2. pH.
3. Crop yield.
4. Planting.
5. Chemical application.
6. Irrigation.
7. Land area.
8. Apply the basic rules of mathematics to set up and solve common agricultural production problems.
9. Perform basic arithmetic calculations including whole numbers, ratios and fractions.
10. Convert fractions to decimals and percentages.
11. Solve applied agriculture arithmetic, algebraic and geometric problems.
12. Outline the basic laws of physics related to production agriculture.

1. List and explain the following basic laws and principals:

1. Newton’s Laws.
2. Energy relationships.
3. Temperature and Thermodynamics.
4. Electromagnetism and electricity.
5. Light.
6. Energy gradients and energy potential.
7. States of matter and their relationship to energy levels.
8. Categorize the basic chemical concepts related to production agriculture.
9. List and define the basic chemical concepts of the atom, chemical bonding types, chemical equations, chemical equilibrium, and organic chemistry.
10. List, define and identify salts, cations, anions, bases and acids.
11. List and define the chemical/physical properties of water.
12. Apply fundamental biological concepts related to production agriculture.
13. List and define the basic components of cells, cell energy reactions, cell reproduction, and genetics.
14. List and define the types and classification system for living organisms.
15. List and define the basic biological processes of plants.
16. List, define, and interpret the concepts of ecosystem and biosphere.
17. Define basic hydrologic concepts related to production agriculture.

1. List, define, and explain the concepts of streamflow, subsurface water, and associated terminology.

1. Outline the concepts of climate, climatic components and processes, and their importance in production agriculture.
2. List and define the components that makeup climate, their interactions, and importance in production agriculture.
3. List and define climatic types and their influence on production agriculture.
4. Summarize the technologies and measurement of weather and how weather differs from climate.

1. List and define the terms and instrumentation involved with the description of weather.

2. Explain the interactions of the components of weather.

3. List and define the differences between weather and climate.

4. Define the effects of weather on production agriculture.

1. **INSTRUCTOR’S EXPECTATIONS OF STUDENTS IN CLASS**
2. **TEXTBOOKS AND OTHER REQUIRED MATERIALS**
3. **REFERENCES**
4. **METHODS OF INSTRUCTION AND EVALUATION**
5. **ATTENDANCE REQUIREMENTS**
6. **COURSE OUTLINE**