



MASTER COURSE OUTLINE

Prepared By: Ethan Tonnemaker

Date: April 2021

COURSE TITLE

Soils

GENERAL COURSE INFORMATION

Dept.: AGR

Course Num: 263

(Formerly:)

CIP Code: 01.0301

Intent Code: 21

Program Code: 105

Credits: 5

Total Contact Hrs Per Qtr.: 66

Lecture Hrs: 44

Lab Hrs: 22

Other Hrs:

Distribution Designation: LS

COURSE DESCRIPTION (as it will appear in the catalog)

This course is an introduction to basic concepts of soil science, plant nutrition, and water management. Topics include soil formation and development, soil structure and composition, physical properties of soils, soil minerals, soil chemistry, soil fertility, soil microorganisms, soil ecology, fertilizers, plant, and soil and water relationships.

PREREQUISITES

None

TEXTBOOK GUIDELINES

Soils textbook determined by Agriculture faculty (Example: Nature and Properties of Soils, Brady & Weil)

COURSE LEARNING OUTCOMES

Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:

1. List soil formation factors
2. Estimate and evaluate soil texture using standard methods.
3. Describe the physical properties of soil.
4. Describe the characteristics and behavior of soil water.
5. Explain the basic chemical properties of soil and its relation to crop production.
6. Explain the nature and role organic matter in the soil.
7. List plant nutrients found in soil.
8. Identify soil fertility issues and provide management solutions to correct the issue.
9. Discuss the basics of soil pedology, physics, biology, chemistry, and fertility.
10. Discuss soil conservation practices and management.

INSTITUTIONAL OUTCOMES

COURSE CONTENT OUTLINE

- Soils Formation
- Classification
- Properties of soil

- Color
- Texture
- Structure
- Soil Water
- Chemical Properties of Soil
 - pH
 - Ion Exchange
- Soil Biology
 - Microorganisms
 - Organic Matter
- Soil Fertility
 - Nutrients
- Erosion Control and Conservation

DEPARTMENTAL GUIDELINES *(optional)*

DIVISION CHAIR APPROVAL

DATE