

Virginia Western Community College

HRT 205

Soils

COURSE OUTLINE

Prerequisites:

none

Course Description:

Teaches theoretical and practical aspects of soils and other growing media. Examines media components, chemical and physical properties and soil organisms. Discusses management and conservation.

Semester Credits: 3 Lecture Hours: 2 Lab/Recitation Hours: 2

Required Materials:

Textbook:

Hartmann Brady, C. Nyle; Weil Ray R., 2019. Elements of the Nature and Properties of Soils, Fourth Edition, Pearson Education Inc., 330 Hudson Street, New York, NY 10013.
ISBN-10: 0-13-3254459-3; ISBN-13: 978-0-13-325459-4.

VIRGINIA WESTERN COMMUNITY COLLEGE
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Roanoke, VA 24015
(540)-857-6388



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Course Outcomes

At the completion of this course, the student should be able to:

- Collect soil samples and analyze soil test results.
- Classify soil samples using textural characteristics.
- Identify soil-less media components and characterize their origin, water-holding capacities and drainage qualities.
- Describe technical data printed on commercial fertilizer containers and use this information to calculate application rates.
- Apply knowledge of pH to soil management practices.
- Describe basic principles of soil conservation.

Topical Description:

1. Soils in General – Formation, Classification, Physical Properties
 - a. Chapter 1 The Soils Around Us
 - b. Chapter 2 Formation of Soils from Parent Materials
 - c. Chapter 3 Soils Classification
 - d. Chapter 4 Soil architecture and Physical Properties
2. Soil Water
 - a. Chapter 5 Soil Water: Characteristics and Behavior
 - b. Chapter 6 Soil And the Hydrological Cycle
3. Soil Environment
 - a. Chapter 7 Soil Aeration and Temperature
4. Soil Activity - Chemical
 - a. Chapter 8 The Colloidal Fraction: Seat of Soil Chemical and Physical Activity
 - b. Chapter 9 Soil Acidity, Alkalinity, Salinity, and Sodicity
5. Soil Activity – Organic
 - a. Chapter 10 Organisms and Ecology of Soil
 - b. Chapter 11 Soil Organic Matter
6. Soil Nutrition
 - a. Chapter 12 Nutrient Cycles and Soil Fertility
 - b. Chapter 13 Practical Nutrient Management

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7. Soil Survival
 - a. Chapter 14 Soil Erosion and Its Control
 - b. Chapter 15 Soil and Chemical Pollution

Notes to Instructors:

(List information about optional topics, departmental exams, etc.)

None

[ADA Statement](#) (PDF)

[Title IX Statement](#) (PDF)

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