



This course will include both the technical and practical information that should be of assistance to a student who will farm or go into the fertilizer business. The course deals with the basic soil-plant relationships and the effects of fertility. Detailed information of soil test results will be covered. Materials from the Certified Crop Advisor program will be used.

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Classroom Presentation

Identify symptoms of crops with poor pH values
Calculate soil lime recommendations
Compare the different liming materials

List the various organisms responsible for N fixation
Define nitrification , ammonification , denitrification, mineralization, volatilization, immobilization, leaching
Discuss the factors which affect nitrification
Describe nitrogen transformations and interactions
Describe the nitrogen cycle
Calculate nitrogen recommendations for a given corn field
Determine yield goals

Explain the various roles phosphorus has in plant growth
Identify phosphorus deficiency symptoms in corn, soybeans, and alfalfa
Articulate the behavior of phosphorus in the soil.
List the factors affecting phosphorus availability in the soil
Calculate phosphorus recommendations for a corn, soybean and alfalfa field

Explain the various roles potassium has in plant growth
Identify potassium deficiency symptoms in corn, soybeans, and alfalfa
Articulate the behavior of potassium the soil.
Calculate potassium recommendations for a corn, soybean and alfalfa field

Explain the function of each of the secondary nutrients
Determine the sources of secondary nutrients
Identify secondary nutrient deficiencies
Determine secondary nutrient fertilizer recommendations for various crops and soil types

Explain the function of each of the micronutrients
Determine sources of micronutrient
Determine micronutrient recommendations
Identify micronutrient deficiencies

Practice the correct procedure in collecting good soil samples
Describe the various methods of collecting soil samples, by soil type, grid sampling, composite
Interpret the information on a soil lab test.
Use the soil test results to make a fertilizer recommendation

Be aware of the University of Minnesota fertilizer recommendations

