Managing crop nutrients is one of the most important factors in producing a successful crop. Fertilizers and other nutrient sources are major production expenses, and their mismanagement can lead to serious environmental consequences for both air and water quality. Nutrient management is also one of the more complicated aspects of producing crops, as considerations vary by nutrient source, their methods of measurement and assessment, placement, timing, rate of application, and are dramatically affected by soils and the weather. Background knowledge in nutrient management and better decision-making can help crops professionals to grow better crops, reduce production expenses, and reduce the environmental impact from farming activities.

Nutrient Management is a fully online course that provides knowledge from which those working in agriculture can better understand the intricacies of nutrient management to help their customers and in turn, benefit their companies. Designed for working professionals who must mix continuing education with other responsibilities, participants in the course can access content at their convenience by computer, tablet, or any Internet-connected mobile device.

The foundation of the lessons in this course are dozens of high-definition videos featuring subject matter experts, along with supplemental reading, graphics, glossaries, downloadable slides, and tests. Through visual and audio presentations, this course connects with all learning styles and was specifically designed to meet the needs of off-campus learners.

Contact us
For more information about this or other online agronomy courses designed for the needs of sales staff, growers, applicators and other agricultural professionals:

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COURSE SYLLABUS

Introduction to Nutrient Management
Essential macronutrients and micronutrients, the 4R concept, adaptive management, nutrient management planning, regulations protecting air and water quality

Soil Fertility
Nutrient sources, forms in the soil, cations and anions, factors affecting nutrient movement and availability, leaching, mineralization, nutrient interactions

Soil Organic Matter and Microbiology
Role of microbes on nutrient uptake and availability, crop residue and soil organic matter management, use of cover crops

Nitrogen in the Soil
The nitrogen cycle including mineralization, nitrification, immobilization, denitrification and symbiotic fixation, factors affecting nitrogen transformations

Phosphorus and Potassium in the Soil
Phosphorus and potassium forms and transformations, soil factors affecting availability to plants

Secondary Nutrients and Micronutrients
Forms and transformations of Calcium, Magnesium and Sulfur, and soil factors affecting availability to plants

Soil pH and Soil Amendments/ Salt Affected Soils
Soil acidity, alkalinity, and salinity effects on crop production, active and reserve acidity, managing soil environments with soil amendments

Nutrient Assessment and Diagnostics
Soil and plant sampling techniques, site-specific sampling, lab tests for soil and plants, types and use of sensors, factors affecting lab and sensor results

Fertilizers and Fertilizer Additives
Fertilizer analyses, characteristics of fertilizer products, field characteristics that affect use, elemental vs. oxide, calculations, use of fertilizer additives

Fertilizer Recommendations and Economics
Sufficiency level, removal/replacement, and nutrient balance approaches, P-based vs. N-based, how recommendations are derived, probabilities of response

Nitrogen Application Timing and Placement
Crop response and environmental considerations regarding different methods of nitrogen applications.

P and K Application, Timing and Placement
Crop response and environmental considerations regarding preplant, sidedress, and split applications of Phosphorus and Potassium