

NUTRIENT MANAGEMENT ONLINE COURSE

2018 Session Starting Dates for this 12-Week Course: January 10, June 13 and September 19

NUTRIENT MANAGEMENT EDUCATION OFFERED IN A CONVENIENT FORMAT

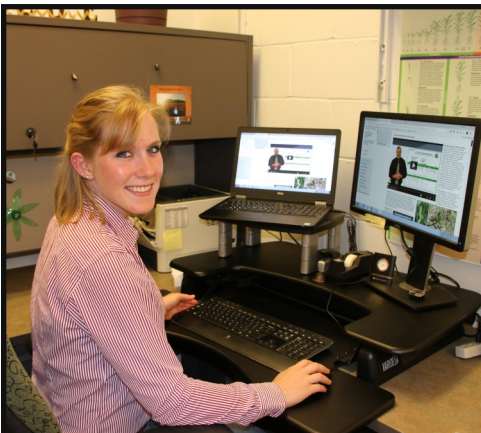
Managing crop nutrients is one of the most important factors in producing a successful crop. Fertilizers and other nutrient sources are major production expenses, and their mismanagement can lead to serious environmental consequences for both air and water quality. Nutrient management is also one of 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.

**Successful Completion
Earns a Certificate of
Completion & 24 Certi-
fied Crop Adviser CEUs**

Agricultural professionals in this course will gain current knowledge of managing crop nutrients that will help them understand the needs of particular crops and how to maximize crop production. The course will equip them to better communicate with and advise customers, helping build customer confidence and trust.



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:

Email: ellearn@purdue.edu

Webpage: <http://ag.purdue.edu/agry/ADE/pages/default.aspx>
Or <http://tinyurl.com/purdueagry>

NUTRIENT MANAGEMENT

ONLINE COURSE

INSTRUCTORS



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Josh McGrath, PhD
Plant & Soil Sciences
University of Kentucky



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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