PURDUE | AGRONOMY
AGRICULTURE | eLEARNING

PRECISION AGRICULTURE
ONLINE COURSE

2017 Session Starting Dates for this 12-Week Course: January 18, June 14, and September 20

PRECISION AGRICULTURE EDUCATION
OFFERED IN A CONVENIENT FORMAT

Applying technology to crop production through mechanization, fertilizers, crop protection chemistry, genetics, and other innovations has resulted in multiple-fold gains in productivity and efficiency. Now, the application of information technology to crop production, known as precision agriculture, has transformed many aspects of crop production and promises even more.

While the capabilities of precision agriculture have progressed dramatically in recent years, the inability to understand and apply these to benefit crop production can greatly limit utility. Change has come so fast that many involved in crop production are unfamiliar with, or uncomfortable working around an often intimidating array of sensors, wires, controllers, monitors, and computer programs.

Precision Agriculture is a fully online course that provides knowledge from which those working in agriculture can better understand the science of site-specific agriculture to help their customers and 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 mobile device.

The foundation of the lessons in this course are dozens of high-definition videos featuring leaders in precision agriculture, along with supplemental reading, graphics, glossaries, 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 & Certified Crop Adviser CEUs

Agricultural professionals in this course will gain current knowledge of precision agriculture that will help them understand management challenges of 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, farmers and other agricultural professionals, email:

**berickso@purdue.edu or janblack@purdue.edu
http://ag.purdue.edu/agry/ADE/pages/default.aspx**

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Designer & Lead Instructor
Bruce Erickson, PhD, CPAg

Bruce Erickson, PhD, is Purdue University's Agronomy Education Distance & Outreach Director. In this course, Dr. Erickson shares from his wealth of experience in agronomy, precision agriculture, and distance education.

Dr. Erickson completed his undergraduate degree at Iowa State University in agronomy, then began his professional career as an agronomist with DuPont Pioneer. After completing his Master's Degree at Iowa State University in crop production & physiology and his Doctoral Degree in agronomy at Purdue, Dr. Erickson joined the staff of the Purdue Department of Agronomy.

Dr. Erickson previously served as Senior Technical Designer at Agri-Business Group in Indianapolis. He was Director of Cropping Systems Management and Associate Director of the Center for Commercial Agriculture, where he worked extensively with precision farming and crop production economics research.

Most recently, he was the Agronomic Education Manager for the American Society of Agronomy, where he was responsible for the International CCA performance objectives and development of the International CCA Exam, the India CCA Exam, and the Mexico CCA Exam.

COURSE MODULE OUTLINE

Introduction to Precision Agriculture
Scope and overview of the technologies and their applications

Global Positioning Systems
Global navigation systems used around the world, how they work, equipment, factors affecting accuracy

Differential Correction
Ground-based and space-based correction systems, levels of accuracy, manual guidance and autoguidance

Sensors
Satellite, aerial, UAV, and proximal sensing platforms; active vs. passive sensing; spectral, spatial and temporal resolution; soil, crop and weather sensors

Soil & Water Spatial Variability
Soil formation and change across landscapes, soil mapping technology and utility, precision land management, irrigation and drainage

Nutrient Spatial Variability
Grid and zone sampling approaches, developing management zones, nutrient-specific sensors, equipment for nutrient VRT

Crop Spatial Variability
Yield monitors for grain and non-grain crops, calibration of monitors, data cleaning, yield map interpretation, yield stability, crop quality sensors

Geographic Information Systems
GIS coordinate systems, map scales and standards, capture, storage, editing, analysis, display, image classification

Automation
Implement steering, VRT seeding, planter unit controllers, variable hybrid/ variety planting, spray boom and nozzle controllers, boom leveling

Data Analysis
Experimental design, data quality, compatibility, privacy, interpretation and correlation, product comparisons

Telematics
Understanding telematics technology, wireless network applications, product comparisons

Precision Farming Economics and Adoption
Cost effectiveness of guidance systems, section controllers, site-specific management in various crops, regions, situations