Fundamentals in Applied Agronomy

June-September, 2013

An introductory agronomy course offered by the American Society of Agronomy

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Class Schedule/Time

Tuesday evenings from June 18 to September 10.
7:00 to 9:15 p.m. Eastern/ 6:00 to 8:15 p.m. Central/5:00 to 7:15 Mountain/4:00 to 6:15 p.m. Pacific

Most class periods will last about two hours, with a ten-minute break halfway through. To maximize their learning, students will be expected to spend time reading and studying outside of class in addition to the scheduled class periods. The instructor may be contacted at any time via telephone or email with questions or comments.

Communication Requirements

The course is delivered live via the Web using GoToMeeting software. All sessions are also recorded. *An email address and high-speed internet access are required.* GoToMeeting Systems Requirements: http://support.citrixonline.com/GoToMeeting/help_files/GTM010003#What

Optional Resource Materials

Preparing for the 2013 International CCA Exam (International Plant Nutrition Institute) $50.00: http://ppi-store.stores.yahoo.net/ccamanual.html You may also use **Preparing for the 2012 International CCA Exam** if that publication is available to you.

Soil Fertility Manual (International Plant Nutrition Institute) $26.00- $35.00
http://ppi-store.stores.yahoo.net/soilferman.html

Field Crop Scouting Manual (University of Illinois) You may order either the CD version (Product Number CDR880e) or the hard copy (Product Number X880e)—each is $75.00. https://pubsplus.uiuc.edu/ For addresses outside of the U.S. you must telephone in your order at (217)333-2007.

Please note: Much of the required reading for this course will be available from Extension and other publications available free on the Internet (see syllabus on the pages that follow).

Exams/Grading A ten question quiz will be offered after each lesson, available for students to take on-line during their own time. Quizzes must be completed by Midnight Central Time on the last day specified for each quiz (see Syllabus/Schedule). Individual performance on weekly quizzes will be provided confidentially to students via email to give an indication of mastery of various topics. Our system tracks quiz scores, but please keep these notices as your proof of completion. **No make-up quizzes will be offered.** There will not be a final exam for this course, and grades will not be assigned. Students who accumulate at least 84 of the 120 quiz points (70%) can request a certificate of completion for the course. Missed quizzes will count as zero.

Certified individuals seeking Continuing Education Units (CEUs) must get a passing score (at least 7 of 10) on a quiz to get credit for that particular session. The system allows you to take quizzes multiple times, but only your first score is counted. Total CEUs for CCAs/CPAgs include 6.0 in Nutrient Management, 6.0 in Soil & Water Management, 6.0 in Pest Management and 6.0 in Crop Management or 24.0 Professional Meetings CEUs for CPSS/CPSC.

Student Directory Information Student name, city/state/country, phone, and email will be included in a listing on the class web site, available only to the other students and those administering this class. Students can opt out of this listing when they register for the class.

Use of Class Materials Registrant agrees that the name indicated on the registration form is the sole individual receiving the on-line instruction and the only person completing the on-line quizzes. Individuals found in violation of this policy will be subject to dismissal from this course, revocation of certification, and possible loss of privileges to participate in future offerings from the American Society of Agronomy.

The PowerPoint presentations, class recordings, quizzes, worksheets, and other materials developed specifically for this class are for the educational purposes and use of students registered for this class. They are not to be copied, forwarded or shared in any way with anyone for any other use without the permission of the American Society of Agronomy.

Class Web Site Students registered for the class will have access to the class web site where the following will be posted:

- Lecture video recordings (audio with PowerPoint slides)
- PowerPoint slides in PDF format.
- Link to quizzes
- Answer keys to quizzes

Access to the class web site will begin by June 18 and end one month following the last class period, ending October 10.

Syllabus/Schedule (subject to change)

Class Date		Topics	Reading Assignment Prior to Class	Quizzes
Tue June 18	Soil and Water Management	**Lesson 1.** Orientation to Class. Soil Chemical, Physical and Biological Characteristics	Preparing for the 2013 International CCA Exam, pages 49-80 (see optional texts) Management of Wisconsin Soils Chapters 1 and 2: http://www.soils.wisc.edu/extension/pubs/A3588.pdf Using Web Soil Survey (WSS) (Explore) http://websoilsurvey.nrcs.usda.gov/app/	Last Day for Quiz 1 is July 1
Tue June 25		**Lesson 2.** Site Characterization, Soil Conservation, Residue Management	Management of Wisconsin Soils Chapter 5 Managing Crop Residue with Farm Machinery http://www.agry.purdue.edu/ext/pubs/AY-280-W.pdf Public Land Survey System http://dnr.wi.gov/topic/forestmanagement/documents/plsstutorial.pdf	Last Day for Quiz 2 is July 8
Tue July 2		**Lesson 3.** Water and Solute Movement, Soil/Plant Water Relations, Irrigation and Drainage	Management of Wisconsin Soils Chapter 3 Available Water Capacity (NRCS) http://soils.usda.gov/sqi/publications/files/avwater.pdf	Last Day for Quiz 3 is July 15
Tue July 9	Crop Management	**Lesson 4.** Cropping Systems, Tillage, Hybrid and Variety Selection	Preparing for the 2013 International CCA Exam, pages 141-166	Last Day for Quiz 4 is July 22
Tue July 16		**Lesson 5.** Seed Quality, Planting Practices, Crop Growth, Development, and Diagnostics	Corn Growth Stages: http://www.uky.edu/Ag/GrainCrops/Presentations/Corn%20Growth%20Stages.ppt Growth and Development Guide for Spring Wheat http://www.extension.umn.edu/distribution/cropsystems/DC2547.html	Last Day for Quiz 5 is Aug 5
Tue July 23		**Lesson 6.** Harvest and Storage, Managing Production Risk, Precision Farming	How an Alfalfa Plant Develops http://lib.ndsu.nodak.edu/repository/bitstream/handle/10365/9130/R648_1999.pdf?sequence=1 Soybean Growth Stages http://extension.agron.iastate.edu/soybean/production_growthstages.html	Last Day for Quiz 6 is Aug 12

Class Date		Topics	Reading Assignment Prior to Class	Quizzes
Tue August 6	Nutrient Management	**Lesson 7.** Basic Concepts of Plant Nutrition and Soil Fertility, The Nitrogen Cycle, Soil pH	Preparing for the 2013 Intl CCA Exam, pages 1-48 Soil Fertility Manual (see required texts) Chapters 1-7 Nitrogen Basics—The Nitrogen Cycle http://nmsp.cals.cornell.edu/publications/factsheets/factsheet2.pdf	Last Day for Quiz 7 is Aug 19
Tue August 13		**Lesson 8.** Liming and Soil Amendments; Fertilizers, Manure, & Other Nutrient Sources; Fertilizer Additives		Last Day for Quiz 8 is Aug 26
Tue August 20		**Lesson 9.** Soil and Tissue Analysis, Fertilizer Calculations, Nutrient Application	Soil Fertility Manual Chapters 8-11	Last Day for Quiz 9 is Sept 2
Tue August 27	Pest Management	**Lesson 10.** Principles of Integrated Pest Management, Identification of Insects, Weeds & Diseases	Preparing for the 2013 International CCA Exam, pages 89-131 Field Crop Scouting Manual (see optional texts), Chapter 1	Last Day for Quiz 10 is Sept 9
Tue Sept 3		**Lesson 11.** Pest Sampling and Monitoring, Decision-Making Guidelines, Pesticide Modes of Action	Field Crop Scouting Manual, Chapter 2 and Weed Keys 2012 Weed Control Guide for Ohio and Indiana http://www.btny.purdue.edu/pubs/WS/WS-16/ Herbicide Mode of Action http://www.ksre.ksu.edu/bookstore/pubs/c715.pdf	Last Day for Quiz 11 is Sept 23
Tue Sept 10		**Lesson 12.** Pest Management Strategies, Resistance Management, Pesticide Application and Safety	Field Crop Scouting Manual, Chapters 3, 4, and 5 Calibrating Pesticide Application Equipment http://msuextension.org/publications/AgandNaturalResources/MT200914AG.pdf	Last Day for Quiz 12 is Sept 23

Course Description Fundamentals in Applied Agronomy is an introductory crops and soils course designed for the practitioner hoping to build their knowledge and skills in the topics that are most needed for a Certified Crop Adviser. Upon completion the learner should have a fundamental knowledge of soil and water, nutrient management, pest management, and crop management. Topics include basic soil physical and biological characteristics, resource conservation, irrigation, drainage, water quality, soil and tissue analysis and interpretation, fertilizers and other nutrient sources, soil pH and liming, pest identification, sampling, and control, cropping systems, planting practices, crop growth and development, harvest, storage, and managing production risk, among many others.

The course is taught using distance education technology, but a variety of practical examples and case situations will be woven into content delivery to maximize understanding and its application in the field. Whether you are personally involved in production agriculture, advising farmers as an agricultural retailer or consultant, a representative for an agricultural business or government agency, or just looking to build your expertise, this course will cover topics that should be of direct interest to you. While this course is not designed to teach a student how to take the Certified Crop Adviser exams or to cover all the topics included in local or International performance objectives, it will complement an individual's preparation in becoming a Certified Crop Adviser or Certified Professional Agronomist.

Course Instructor Bruce Erickson is a Certified Professional Agronomist that uses his expertise and experience in education and agribusiness to provide solutions for crop producers, their advisers, and the industries that depend on them. Erickson's areas of expertise include corn and soybean production, remote sensing and its application in precision agricultural practices, instructional design, and competency-based education and assessment. He has experience in building technical, product-related, sales and marketing programs to fulfill individual proficiency needs and to meet business goals, and then delivering through classroom, field, teleconference, CD and web-based platforms. Erickson is employed by the American Society of Agronomy as their Agronomic Education Manager, and is also Adjunct Assistant Professor of Agronomy at Purdue University.

Erickson grew up on an Iowa farm, completed his undergraduate work at Iowa State University in Agronomy, then began his professional career as an agronomist with Pioneer Hi-Bred. After completing his Master's at Iowa State in Crop Production and Physiology and his PhD in Agronomy at Purdue, Erickson was on the staff of the Purdue Department of Agronomy where he taught the introductory agronomy course and played a leading role in developing and maintaining the performance objective documents and the minimum proficiency exams for the International Certified Crop Adviser Program (CCA). For three years Erickson served as Senior Technical Designer at Agri Business Group in Indianapolis (now Adayana), an agricultural consulting company. Most recently Erickson was Director of Cropping Systems Management and Associate Director of the Center for Commercial Agriculture, where he coordinated the Top Farmer Crop Workshop, and worked extensively with precision farming and crop production economics research and Extension.