

# **Agronomy Basics**

*A beginning agronomy course offered by the American Society of Agronomy.*

Lectures are approximately one and a half hours. To maximize learning, students will be expected to spend time reading and studying outside of the recorded lesson.

**Course Description** Agronomy Basics is an introductory crops and soils course. 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 management, 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.

**Quizzes** A ten question quiz will be offered after each lesson which must be passed (7 out of 10 or 70%) in order to move on to the next lesson in the module. There will not be a final exam for this course, and grades will not be assigned. A certificate of completion will be available after the course is completed.

Certified individuals seeking Continuing Education Units (CEUs) will receive the CEUs after the quiz is passed by scoring 7 out of 10 or 70%. Total CEUs for the course for CCAs/CPAGs include 1.5 in Nutrient Management, 1.5 in Soil & Water Management, 1.5 in Integrated Pest Management and 3.0 in Crop Management or 7.5 Professional Meetings CEUs for CPSS/CPSC/CST.

**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.

## Syllabus

| Session/Topics   | Reading Assignment Prior to Class   |
|--|---|
| <b>Lesson 1</b><br><b>Soil Chemical, Physical, &amp; Biological Characteristics</b><br><b>Site Characterization</b><br><b>Soil Conservation</b><br><b>Residue Management</b><br><b>Soil/Plant Water Relations</b><br><b>Irrigation and Drainage</b>                  | Management of Wisconsin Soils Chapters 1, 2, 3, and 5:<br><a href="http://www.soils.wisc.edu/extension/pubs/A3588.pdf">http://www.soils.wisc.edu/extension/pubs/A3588.pdf</a><br>Using Web Soil Survey (WSS) (Explore)<br><a href="http://websoilsurvey.nrcs.usda.gov/app/">http://websoilsurvey.nrcs.usda.gov/app/</a><br>Managing Crop Residue with Farm Machinery<br><a href="https://mdc.itap.purdue.edu/item.asp?itemID=16213#.VYxFRJgw-Uk">https://mdc.itap.purdue.edu/item.asp?itemID=16213#.VYxFRJgw-Uk</a><br>Public Land Survey System<br><a href="http://dnr.wi.gov/topic/forestmanagement/documents/plsstutorial.pdf">http://dnr.wi.gov/topic/forestmanagement/documents/plsstutorial.pdf</a><br>Available Water Capacity (NRCS)<br><a href="http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051279.pdf">http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051279.pdf</a> |
| <b>Lesson 2</b><br><b>Major Crops Around the World and U.S</b><br><b>Crop Types and Cropping Systems</b><br><b>Crop Improvement</b><br><b>Corn, Soybean, &amp; Wheat Planting</b><br><b>Growth, Development, and Diagnostics</b>                                     | Corn Growth Stages:<br><a href="http://graincrops.ca.uky.edu/files/corn/CornGrowthStages_2011.pdf">http://graincrops.ca.uky.edu/files/corn/CornGrowthStages_2011.pdf</a><br>Growth and Development Guide for Spring Wheat<br><a href="http://www.extension.umn.edu/agriculture/small-grains/growth-and-development/spring-wheat/">http://www.extension.umn.edu/agriculture/small-grains/growth-and-development/spring-wheat/</a><br>Soybean Growth Stages<br><a href="http://extension.agron.iastate.edu/soybean/production_growthstages.html">http://extension.agron.iastate.edu/soybean/production_growthstages.html</a>  |
| <b>Lesson 3</b><br><b>Basic Concepts of Plant Nutrition and Soil Fertility</b><br><b>The Nitrogen Cycle</b><br><b>Soil pH</b><br><b>Soil and Tissue Analysis</b><br><b>Fertilizers, Fertilizer Application</b><br><b>Simple Fertilizer Calculations</b>              | Nitrogen Basics—The Nitrogen Cycle<br><a href="http://nmsp.cals.cornell.edu/publications/factsheets/factsheet2.pdf">http://nmsp.cals.cornell.edu/publications/factsheets/factsheet2.pdf</a>   |
| <b>Lesson 4</b><br><b>Identification of Insects, Weeds &amp; Diseases</b><br><b>Pest Sampling and Monitoring</b><br><b>Pesticide Modes of Action</b><br><b>Pest Management Strategies</b><br><b>Resistance Management</b><br><b>Pesticide Application and Safety</b> | 2016 Weed Control Guide for Ohio, Indiana and Illinois<br><a href="https://mdc.itap.purdue.edu/item.asp?Item_Number=WS-16-W#.V8XTqTX1KfE">https://mdc.itap.purdue.edu/item.asp?Item_Number=WS-16-W#.V8XTqTX1KfE</a><br>Herbicide Mode of Action<br><a href="http://www.ksre.ksu.edu/bookstore/pubs/c715.pdf">http://www.ksre.ksu.edu/bookstore/pubs/c715.pdf</a><br>Calibrating Pesticide Application Equipment<br><a href="http://msuextension.org/publications/AgandNaturalResources/MT200914AG.pdf">http://msuextension.org/publications/AgandNaturalResources/MT200914AG.pdf</a>  |
| <b>Lesson 5</b><br><b>Precision Farming</b><br><b>Harvest and Storage</b><br><b>Basic Farm Economics</b>   |   |