

**Certified Crop Adviser
Continuing Education Standards**

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Standards Document for Continuing Education

Educational Areas

Foreward

To become a Certified Crop Adviser (CCA), one must pass exams, have 2 to 4 years of advising experience with farmer/grower clients, be supported by letters of recommendation, and sign a code of ethics.

The minimum competency exams stress knowledge and skills in: Nutrient Management, Soil and Water Management, Pest Management, and Crop Management. The Performance Objectives documents outline competencies and objectives for these subject matter areas. After demonstrating minimum competence by passing the exams the CCA maintains certification status by attaining a minimum number of Continuing Education Units (CEUs) during each two-year certification cycle.

This document has been developed to 1) provide standards for continuing education program development and 2) to allow CCAs to be more involved by defining continuing education direction. This document achieves the former by outlining the **educational areas**, their **scope** and **subject matter** for course development by vendors producing continuing education programs. This document achieves the latter by engaging the entire CCA structure and CCAs in particular to define subject matter that best represents new knowledge and learning needs among CCAs.

The Performance Objectives documents defined the minimum skills and knowledge necessary to become a CCA. This Continuing Education document outlines the subject matter and "leading edge" learning needs of agricultural professionals. These are the additional educational areas that CCAs will find useful in building upon their competencies demonstrated when they passed the certification exams. This document will guide educators in program development, and CCAs in deciding which programs are appropriate for their continuing education needs. The document will also be used to help determine if continuing education programs are appropriate for awarding CEUs by local boards. The examples following are not to be considered as limitations for continuing education, but as the first step in a move toward more in-depth, advanced and forthcoming topics.

Every educational program or self-study course submitted for CEU credit should use this document to reference the **educational area**, **subject matter**, and when available, but not limited to, the **examples of continuing education** that best define the scope of the continuing education program.

Introduction:

The continuing education program of the Certified Crop Adviser (CCA) program provides learning opportunities for CCAs to improve their knowledge and skills as crop advisers. Educational programs can be offered by individuals with appropriate credentials, and may be submitted for Continuing Education Unit (CEU) review and course assignment to the local (state/province/region) board where the meeting is held or if online, where the vendor is located. For meetings being held outside the US and Canada, the application may be sent to the International CCA board's Madison office.

In order to maintain certification status, a CCA must complete at least 40 CEUs (45 CEUs for Certified Professional Agronomist (CPAg)) in a two-year cycle with a minimum of 5 CEUs in each of the 4 categories of Nutrient Management, Soil and Water Management, Pest Management, and Crop Management and at least 20 of the 40 total CEUs must be Board Approved. In addition, CEUs may be attained in the Professional Development category although this category has no minimum or maximum credit requirement for the CCA. For CPAg, 5 CEUs are required in Professional Development.

A CCA who has earned a Specialty Certification will need to follow these additional requirements to those above:

- 4R Nutrient Management Specialty (4RNMS) – a minimum of 7.5 for the Nutrient Management and Soil and Water Management categories.
- Sustainability Specialty (SSp) – a minimum of 5 CEUs in the sustainability category.
- Resistance Management Specialty (RMS) – a minimum of 10 in the pest management category.
- Precision Agriculture (PASp) – a minimum of 5 in the precision ag category.

Types of CEUs:

1. Board Approved – an educational event that a CCA attends in person or via the Internet (professional meetings, field days, workshops, seminars, college/university courses, live - online programs like webinars, etc.) or self-paced learning (written articles, videos, computer based, online programs that are not live) that have been reviewed by a CCA Board and approved for CCA CEUs. The event or materials will be assigned a CCA CEU tracking number by the appropriate office.
 - a. Meetings or live events must have a way to track attendance and report the attendance to the ICCA office in Madison, WI.
 - b. Self Study – materials or programs that are not live/real time but can be completed at the CCA's leisure must contain a quiz. See the instructions contained in the ICCA Program's Policy and Procedures Manual for more details.
2. Self Reported – same types of educational events as described under Board Approved excluding self-study, but the event vendor did not submit it to a local CCA Board for review. A CCA may "self report" the event as CEUs by using the CEU self reporting form found on the web site. The local CCA Board will randomly audit self reported CEUs to ensure quality.

3. Self Directed (study) - are not accepted by the CCA Program at this time. Self developed, no instructor or developer involved in the event or materials, the CCA does all of it on their own with no tracking mechanism or quiz.

A CCA is bound by the CCA Code of Ethics. The Code of Ethics follows this page as a point of information.

CODE OF ETHICS

Certified Crop Adviser (CCA) Code of Ethics

All individuals certified under the International Certified Crop Adviser (ICCA) program must subscribe to the CCA Code of Ethics. The ICCA Standards & Ethics Committee periodically reviews the current Code of Ethics.

Article I. Preamble

1. The privilege of professional practice imposes obligations of responsibility as well as professional knowledge. The ICCA program certifies the credentials of individuals through state/provincial certification boards.
2. When using the CCA designation, a CCA shall use professional conduct in all communications relating to this vocation including but not limited to emails, blogs, and social media.
3. The ICCA program will award the title of Certified to individuals who meet the experience, testing requirements and the continuing education requirements of the ICCA program. The ICCA program does not require college level education. A college education will substitute for part of the ICCA work experience requirement as provided for in the ICCA guidelines.
4. Certified Crop Advisers (hereafter called CCAs), at the request of a client or employer, must disclose the information used to gain certification. CCAs who knowingly misrepresent their credentials will face disciplinary action.

Article II. Relation of Professional to the Public

1. A CCA shall avoid and discourage sensational, exaggerated, or unwarranted statements that might induce participation in unsound enterprises.
2. A CCA shall not give professional opinion, or make a recommendation, without being as thoroughly informed as might reasonably be expected considering the purpose for which the opinion or recommendation is desired; and the degree of completeness of information upon which it is based should be clear.
3. A CCA shall not issue a false statement or false information even if directed to do so by employer or client.

Article III. Relation of Professional to Employer and Client

1. A CCA shall protect, to the fullest extent possible, the interest of the employer or client insofar as such interest is consistent with the law and professional obligations and ethics.
2. A CCA who finds that obligations to the employer or client conflict with their professional obligation or ethics should work to have such objectionable conditions corrected.
3. A CCA shall not use, directly or indirectly, employer or client's information in any way that would violate their confidentiality.
4. A CCA shall not divulge information given in confidence.
5. A CCA retained by one client shall not accept without the client's written consent, an engagement by another if the interests of the two are in any manner conflicting.
6. A CCA who has made an investigation for any employer or client shall not seek to profit economically from the information gained, unless written permission to do so is granted, or until it is clear that there can no longer be a conflict of interest with the original employer or client.
7. A CCA shall engage or advise employer or client to engage and cooperate with other experts, specialists and government agency staff.
8. A CCA protects the interest of a client by recommending only products and services that are in the best interest of the client and public.
9. A CCA protects his/her credibility by disclosing to clients how he/she will be compensated for providing recommendations to the client.

Article IV. Relation of Professionals to Each Other

1. A CCA shall not falsely or maliciously attempt to injure the reputation of another.
2. A CCA shall freely give credit for work done by others, to whom the credit is due, and shall refrain from plagiarism of oral and written communications and shall not knowingly accept credit rightfully due another person.
3. A CCA shall not use the advantage of public employment (e.g. university, government) to compete unfairly with other certified professions.
4. A CCA shall endeavor to cooperate with others in the profession and encourage the ethical dissemination of technical knowledge.

Article V. Duty to the Profession

1. A CCA shall aid in exclusion from certification, those who have not followed this Code of Ethics or who do not have the required education and experience.
2. A CCA shall uphold this Code of Ethics by precept and example and encourage, by counsel and advice, other CCAs to do the same.
3. A CCA having positive knowledge of deviation from this Code by another CCA shall bring such deviation to the attention of the CCA's Local Board.

Approved by

International CCA Board of Directors 07/97

Edited and approved by

ICCA Board of Directors 09/2016

**Educational Area:
Nutrient Management / 4R Nutrient Management Specialty (4RNMS)**

Scope:

Nutrient management is an integral part of all crop production systems. It is important for the CCA to make recommendations that meet crop nutrient requirements, compliment the grower's management practices, and minimize adverse effects on the environment. This section also supports the 4RNMS. Some of these topics could also apply under the Sustainability Specialty (SSp) but the vendor needs to justify the appropriate category in their CEU application.

Nutrient Management / 4RNMS Subject Matter Areas

1. Soil fertility

Examples of Continuing Education

- a. Soil sampling procedures
- b. Soil testing components, uses, and applications to cropping systems
- c. Analysis, interpretation and uses of soil testing data
- d. Designing, conducting, and interpreting results of experimental trials
- e. Soil pH management in cropping systems
- f. Nutrient management in cropping systems
- g. Role and fate of essential and nonessential elements in cropping systems

2. Plant nutrition

Examples of Continuing Education

- a. Nutrient uptake from soil, air, and water
- b. Nutrient mobility within plants
- c. Evaluating crop nutrient status
- d. Nutrient deficiencies, sufficiency levels, luxury consumption, and toxicities
- e. Tissue sampling, testing and interpretation
- f. Nutrient management planning
- g. Nutrient management for environmental concerns
- h. Using environmental assessment tools in nutrient management
- i. Interactions between different nutrients
- j. Preparing nutrient management plans

3. Integrating nutrient management between crop and animal systems

Examples of Continuing Education

- a. Use, testing, and nutrient availability of livestock manures
- b. Nutrition systems and how it affects manure values
- c. Cover cropping systems

4. Compliance with government regulations and programs

Examples of Continuing Education

- a. Water and air quality
- b. Environmental issues
- c. Conservation programs
- d. Risk assessment tools

5. Economic considerations for nutrient management planning

Examples of Continuing Education

- a. ROI of fertilizer use and management
- b. Optimizing nutrient use
- c. MRTN – Maximum return to nitrogen
- d. NUE – Nutrient Use Efficiency

6. Security and safety in sales, storage and handling of nutrients

Examples of Continuing Education

- a. Diking / containment of fertilizer products
- b. Government policies and regulations

7. Nutrient sources

Examples of Continuing Education

- a. Commercial products
- b. Organic materials, biosolids
- c. Industrial byproducts
- d. Enhanced efficiency products

8. Nutrient application and placement systems (copy to PASp)

Examples of Continuing Education

- a. Variable-rate vs uniform-rate technology
- b. Equipment calibration and uniformity
- c. Field application methods
- d. Fertigation
- e. Advances in equipment technology
- f. Remote sensing

9. Nutrient management in organic production

Examples of Continuing Education

- a. Plant nutrient-pest interactions in organic systems
- b. Nutrient availability from organic sources
- c. Qualifications and criteria for organic nutrient sources

**Educational Area:
Soil and Water Management / 4RNMS**

Scope:

Soil and water management is an integral part of nutrient management, pest management and crop management. Soil properties, site characteristics, and soil and water movement affect nutrients and pesticides in the environment. Also, they influence crop management and tillage practices needed for economic crop production and environmental protection. The CCA should be able to examine plants and soils in the field, and with the aid of additional information, make effective crop management decisions. This section also supports the 4RNMS. Some of these topics could also apply under the Sustainability Specialty (SSp) but the vendor needs to justify the appropriate category in their CEU application.

Soil and Water Management / 4RNMS Subject Matter Areas:

- 1. Effect of soil health, physical, chemical and biological properties of soils on management practices**
Examples of Continuing Education
 - a. Aggregation and structure
 - b. Organic matter management
 - c. Soil biological considerations

- 2. Manage soil and water quality in the environment**
Examples of Continuing Education
 - a. Soil erosion control
 - b. Water, nutrient, pesticide and other chemical movement off-site
 - c. Source and fate of potential pollutants
 - d. Effects of tillage on soil and water quality
 - e. Application of risk assessment tools (e.g., phosphorus index) to the field
 - f. Nutrient leaching

- 3. Characterization of soils and landscapes**
Examples of Continuing Education
 - a. Obtaining and using information sources to characterize soils and landscapes
 - b. Applying soil and landscape information to management systems

- 4. Governmental and agency air and water-quality standards and regulations**
Examples of Continuing Education
 - a. Application setbacks
 - b. Water shed management
 - c. Applying hydrologic information to nutrient or soil management
 - d. Conservation assistance programs

- 5. Managing soil-plant-water relationships**
Examples of Continuing Education
 - a. Drought mitigation strategies
 - b. Flood mitigation strategies
 - c. Water management strategies

6. Applying land-use capability and soil productivity information
Examples of Continuing Education

- a. Utilizing soil type and productivity indices

7. Water management

Examples of Continuing Education

- a. Irrigation management, monitoring, efficiencies
- b. Understanding drainage systems and management
- c. Methods of moisture conservation
- d. Tools and models for measuring and managing

8. Managing soil degradation

Examples of Continuing Education

- a. Salinity
- b. Sodicty
- c. Organic matter losses
- d. Compaction
- e. Erosion

9. Agricultural ecosystems policy

Examples of Continuing Education

- a. Carbon sequestration
- b. Water quality trading
- c. Carbon credit trading
- d. Nitrous oxide minimization

**Educational Area:
Pest Management / Resistance Management Specialty (RMS)**

Scope:

Pest Management is an ever-evolving science. New pesticides and other pest management technologies are discovered, developed, and registered annually. New pests are imported to North America, requiring new management methods that are both cost effective and environmentally friendly. The CCA needs to stay current with emerging management practices, new pesticide products, and current governmental regulations for their proper use. This section also supports the RMS. Some of these topics could also apply under the Sustainability Specialty (SSp) but the vendor needs to justify the appropriate category in their CEU application.

Pest Management / RMS Subject Matter Areas:

1. Integrated pest management for conventional and organic cropping systems

Examples of Continuing Education

- a. Pesticide modes of action and pesticide interactions
- b. Proper use of crop protection products and label updates
- c. Emerging technologies for pest identification, survey, and damage estimates.
- d. Novel pest control agents and strategies
- e. Application of pest management information sources, decision making tools, and internet resources
- f. Using crop, pesticide, and environmental information to make pest management recommendations
- g. Biology of pests
- h. Economics of pest control strategies
- i. Managing pest resistance
- j. Management of new and emerging pests or changes in pest biology
- k. Trap crops

2. Pest management decision-making skills

Examples of Continuing Education

- a. Applying research and principles of modeling and forecasting
- b. Understanding, conducting and interpreting results of experimental trials
- c. Evaluating climate and management factors in pest control systems
- d. Evaluating non-traditional pest control methods
- e. In-field evaluations and management of cropping and pest management systems

3. Application technologies in pest management

Examples of Continuing Education

- a. Advances in application and calibration technologies
- b. Precision pest management technologies

4. Pest management in non-field crop systems

Examples of Continuing Education

- a. Grazing and pasture/range management for pasture/range pest control
- b. Wildlife habitat management
- c. Home and garden pesticide use
- d. Turf and ornamental IPM

5. Safety and environmental aspects of crop protectants

Examples of Continuing Education

- a. Environmental toxicology; signs and symptoms of exposure to toxins
- b. Pesticide use and food safety concerns
- c. Biosecurity in the agro-chemical industry
- d. Pesticide waste management
- e. WPS, PPE, proper use, and label restrictions
- f. Effects of pesticide misuse on crops, wildlife and other non-target species or areas
- g. Wildlife as pests and methods of management

6. Emerging Pest Management

Examples of Continuing Education

- a. Refugia management for biotechnology crops
- b. Segregation of herbicide tolerant or insect resistant crops
- c. Invasive species management
- d. Traits management
- e. Seed bank management
- f. Pest resistance
- g. Pest populations and species shifts
- h. Management of beneficials

Educational Area: Crop Management

Scope:

From new biotechnology applications to new organic standards, CCAs have a significant opportunity to lead the industry in proper adoption of new products and production systems. CCAs need to have a thorough understanding in evaluation and education on adoption of crops and cropping systems in order to provide sound advice. Some of these topics could also apply under the Sustainability Specialty (SSp) but the vendor needs to justify the appropriate category in their CEU application.

Crop Management Subject Matter Areas:

1. Crop biology, biotechnology, physiology, and morphology

Examples of Continuing Education

- a. Uses of genomics, biotechnology, and transgenic technology in crop improvement
- b. Crop physiology in relation to crop management decision making
- c. Climate effects on production agriculture
- d. Effects of plant stresses on crop management and productivity
- e. Weather effects on crop management
- f. Crop growth and development

2. Innovative and emerging crop management tools

Examples of Continuing Education

- a. Innovations in cropping systems management
- b. New technologies for sustainable agriculture
- c. Techniques to enhance seed germination and emergence
- d. Management techniques for producing identity preserved crops
- e. Use of precision agriculture technology
- f. Advances in harvest and storage technology
- g. Techniques to enhance crop growth, harvest, and storage

3. Crop management decision-making skills

Examples of Continuing Education

- a. Integrating soil, climate, and crop data in crop management systems
- b. Evaluating new or novel cropping systems
- c. Understanding and evaluation of crop management data
- d. Understanding statistics
- e. Designing, conducting and interpreting results of experimental trials
- f. Interpreting and applying precision agricultural data

4. Cropping systems management

Examples of Continuing Education

- a. Management techniques for row-crop, grain, forage, turf, organic, vegetable, horticulture, and pasture or range management production systems
- b. Producing crops for energy, fiber, or specifically engineered uses
- c. Agro-forestry production techniques
- d. Greenhouse production systems

- e. Emerging technologies in alternative production systems

5. Crop production equipment and use

Examples of Continuing Education

- a. Equipment innovations and modifications in crop production, harvesting, and storage
- b. Effects of tillage systems
- c. Precision agriculture equipment

6. Economic considerations

Examples of Continuing Education

- a. Government programs
- b. Crop budgeting
- c. Crop insurance programs
- d. Crop marketing and contracting plans
- e. Managing production risk
- f. Post-harvest crop quality

**Educational Area:
Professional Development**

Scope:

The pace of change and innovation in agriculture today is unprecedented and the demands being placed on CCAs have expanded to meet these challenges. It is brought on, in part, by growing environmental concerns, consumer demands, international trade and the use of science and communication technologies. In recognition of the multifaceted services required of CCAs, professional development is an important component of being an effective professional CCA.

Professional Development Subject Matter:

1. Applications of ethics to crop advising

Examples of Continuing Education

- a. Understanding the CCA code of ethics
- b. Understanding the CCA process for ethics complaints
- c. Ethics training

2. Crop advising business and legal issues

Examples of Continuing Education

- a. Employment and business law
- b. Errors and omissions insurance
- c. Liability issues
- d. Complaint handling

3. Technology applications for crop advising

Examples of Continuing Education

- a. Applications of computer technology and programs

4. Business applications

Examples of Continuing Education

- a. Business planning, budgeting, and financial analysis
- b. Land, labor, and capital management
- c. Developing marketing plans for crop advising products and services
- d. Time management
- e. Safety / WPS training

5. Economic issues in agriculture

Examples of Continuing Education

- a. Micro- and macro-economic topics
- b. Global supply and demand forecasts
- c. International trade policies
- d. Commodity marketing and trade

6. Communications/leadership/interpersonal skills

Examples of Continuing Education

- a. Business and technical writing
- b. Interpersonal skills and conflict resolution
- c. Leadership skills, meeting facilitation

- d. Diversity training
- e. Presentation skills, learning styles, creative training techniques
- f. Media training
- g. Developing sales and marketing techniques
- h. Becoming an advocate for agriculture

Educational Area: Sustainability

Scope:

More sustainable agriculture practices are necessary to meet the growing demands of consumers for more sustainably produced food, feed, fiber and fuel. They are also critical in meeting the environmental quality challenges that production agriculture faces with air, soil and water management. CCAs play an integral role in what practices and products farmers will adopt and utilize. Although all CCAs can benefit from this knowledge, this section is in support of the Sustainability Specialty (SSp) certification.

Sustainability Subject Matter:

1. Communicating Sustainability

Examples of Continuing Education

- a. Concepts
- b. Driving factors
- c. Outcomes
- d. Stakeholder engagement

2. Environmental and Resource Stewardship

Examples of Continuing Education

- a. Land
- b. Water
- c. Air Quality
- d. Energy

3. Value Chain

Examples of Continuing Education

- a. Concepts
- b. Food Safety, Food Quality, Sustainability
- c. Social and Economic Implications and Metrics
- d. Measuring and Assessing Sustainability

Educational Area: Precision Agriculture

Scope:

Technology changes at an ever-increasing rate making continuing education in this space even more critical. Precision agriculture tools are no different and they enhance the abilities of a CCA and their clients to apply agronomic practices more effectively. Although all CCAs could benefit from this knowledge, this section is in support of the Precision Agriculture Specialty (PASp) certification.

Precision Agriculture Subject matter:

1. Data Collection, Tools, and Technology - Spatial and Temporal Data

Examples of Continuing Education

- a. Application of tools used in assessment of within-field spatial and temporal variability
- b. Evaluating abiotic and biotic stresses and/or factors that affect crop management and agronomic data.
- c. Collecting spatial and temporal data:
 1. sampling strategies
 2. measurement protocols for collecting abiotic and biotic data
 3. identifying problems and modifying recommendations
 4. creating accurate site-specific recommendations

2. Tools and Sources of Information

Examples of Continuing Education

- a. mapping and navigational tools
- b. remote sensing: examples - unmanned aerial vehicles (UAV), satellite, and traditional manned aircraft
- c. telematics and wireless technology applications
- d. application control systems, robotics
- e. data QA/QC acquisition

3. Data Analysis and Recommendations

Examples of Continuing Education

- a. data management, analyses, and interpretation
- b. soil testing and nutrient recommendations
- c. Site-specific crop management practices
- d. Developing agronomically sound prescriptions

4. Communication, Evaluation and Adjustment

Examples of Continuing Education

- a. comparing precision practices to traditional approaches
- b. metrics of site-specific recommendations
- c. decision and data support systems

5. On-Farm Evaluations (Trials and Field Surveys)

Examples of Continuing Education

- a. application of site-specific agronomic objectives
- b. using precision farming requirements to communicate successes to all partners
- c. demonstrating the value of individual on-farm trials to the client
- d. convey the farmer's needs to the technology/precision service provider and the agronomist/applicator/sprayer