

# AGRICULTURAL AND EXTENSION EDUCATION

## Undergraduate Program Information

The department offers a broad curriculum with majors, options, and minors that prepare students for many careers as professional educators, communicators, and leaders in agricultural, natural resource, technology, and related disciplines. Some example occupations that the department prepares its students to enter are agricultural education teacher, media specialist, technology teacher, Extension agent, NMDA or USDA professional, industry educational specialist, and development specialist. Graduates work in domestic and/or international settings.

### General Undergraduate Degree Requirements

You must meet the general education and departmental requirements for the degree and the major, option or minor chosen. You must establish a cumulative grade-point average of not less than 2.5 before you are admitted into the student teaching or other internship program. You need a minimum of 48 hours in technical agriculture for the secondary teaching certificate program in agriculture.

You may select technical courses required for completion of the majors and options from the following areas:

- Agricultural economics (<https://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/agricultural-economics-business/>)
- Agricultural mechanics
- Animal and range sciences (<https://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/animal-range-sciences/>)
- Entomology, plant pathology and weed science (<https://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/entomology-science/>)
- Fish, wildlife and conservation ecology (<https://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/fish-wildlife-conservation-ecology/>)
- Plant and environmental sciences (<https://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/plant-environmental-sciences/>)

## Graduate Program Information

The Department of Agricultural and Extension Education requires the following items be sent directly to the department for admission:

- **Three letters of recommendation** - Applicants should request letters of recommendation from individuals who know them well enough to comment on their professional skills and abilities, and on their ability to complete graduate-level work.
- **Career statement** - The two-page letter of application should clearly identify applicant's professional and career goals as well as reasons for pursuing the degree.
- **Personal Interview** - Upon receipt of all application materials, a personal interview may be required at the discretion of the Departmental Graduate Committee.

*\*Do not send the above items to the Graduate School as this will cause a delay on your admission status. For questions regarding AXED Graduate*

*Programs, please contact Dr. William Norris, Graduate Coordinator, [wnorris1@nmsu.edu](mailto:wnorris1@nmsu.edu).*

### General Graduate Degree Requirements

The major requires courses in research methods, teaching methods and data collection and analysis; a graduate seminar; and a thesis or creative component. The department also have two 9 credit minors which are available to students completing major work in other departments.

**Thesis plan:** Requires a minimum of 30 semester credits which includes 4-6 credits of thesis. *(Both plans require a final oral examination).*

**Non-Thesis plan:** Requires 32 semester credits of course work which includes a focused creative component. *(Both plans require a final oral examination).*

Flexibility in each program allows students to pursue professional interests and develop specialized competencies in agricultural and extension education, technology education, and technical and scientific areas. The department delivers courses in evening, weekend, and distance formats (go to <https://global.nmsu.edu/> and click on degree programs, then Agricultural and Extension Education) to accommodate student needs. Previous experience in teaching, extension, and/or other professional education positions is highly recommended to be considered for a graduate teaching assistantship.

The department offers major work for a Master of Arts in Agricultural and Extension Education. The degree can be obtained with an emphasis in

- Agricultural Teacher Education,
- Extension Education,
- Strategic Communications

## Degrees for the Department

### Bachelor's Degree(s)

- Agricultural and Extension Education (Agricultural Communications) - Bachelor of Science in Agriculture (<https://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/agricultural-extension-education/agricultural-extension-education-agricultural-communications-bachelor-science-agriculture/>)
- Agricultural and Extension Education (Agricultural Education Teaching) - Bachelor of Science in Agriculture (<https://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/agricultural-extension-education/agricultural-extension-education-agricultural-education-teaching-bachelor-science-agriculture/>)
- Agricultural and Extension Education (Agricultural Extension/Development) - Bachelor of Science in Agriculture (<https://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/agricultural-extension-education/agricultural-extension-education-ag-exten-development-bachelor-science-agriculture/>)

### Master's Degrees

- Agricultural and Extension Education - Master of Arts (<https://catalogs.nmsu.edu/nmsu/graduate-school/agricultural-extension-education-ma/>)

## Minors for the Department

- Agricultural and Extension Education - Graduate Minor (<https://catalogs.nmsu.edu/nmsu/graduate-school/agricultural-extension-education-grad-minor/>)
- Agricultural Communications - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/agricultural-extension-education/agricultural-communications-undergraduate-minor/>)
- Leadership in Agricultural Communications - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/agricultural-extension-education/leadership-agricultural-communications-undergraduate-minor/>)

**Dr. Richie Roberts, Department Head**

**Professors:** *Richie Roberts*; **Assistant Professors** Norris, Spears, Rankin, Dymment

*Richie Roberts, Ph.D. (Oklahoma State University)- agricultural education, agricultural extension, global education; Kristopher Rankin, Ph.D. (Oklahoma State University) – agricultural education, agricultural mechanization, methods of instruction, curriculum design; William Norris, Ph.D. (Mississippi State)– youth development, youth leadership, youth program development; Madison Dymment, Ph.D. (University of Florida) - visual and science communication, streaming science, and the scholarship of teaching and learning; L. Spears, Ph.D. (Iowa State University) - agricultural education and studies, curriculum and instructional technology.*

## Agricultural Extension Education Courses

### AXED 1110. Introduction to Agricultural, Extension, and Technology Education

#### 3 Credits (3)

Orientation to programs, philosophies, competencies and leadership skills needed by professionals in agricultural and technology education, extension education, agricultural communications, and related career opportunities in industry, governmental agencies, and international organizations.

#### Learning Outcomes

1. Orient student to the AXED Department and their role as students.
2. Explore career opportunities (and the related skill sets needed for success) in public schools, career and technical institutions, the cooperative extension service, community, and international development, agricultural communications, agricultural industry associations and public service (e.g., NMDA and USDA).
3. Develop an understanding of the self-leadership skills needed to be effective in a variety of professional and personal environments.
4. Familiarize students with the aspects included within a total program in agricultural or technology education.
5. Strengthen skills in oral and written communications.

### AXED 1130. Techniques in Agricultural Mechanization

#### 3 Credits (2+2P)

Development of competencies in agricultural mechanics including safety, tool identification, operation and maintenance of hand and power tools, cold metal, drafting, and plumbing procedures. Designed for any major wishing to improve mechanical skills needed in agriculturally related occupations in education and industry.

#### Learning Outcomes

1. To understand basic drafting language used in orthographic and isometric drawings.

2. To develop an understanding of the proper use and safety of basic hand and power tools.
3. To develop skills needed to operate basic hand and power tools correctly.
4. To develop an understanding of surveying methods and building layout for construction.
5. To develop an adequate level of competence in workshop techniques.
6. To prepare students to properly teach and demonstrate these techniques to others who may use them as a means of earning a living.

### AXED 2110. Metal Fabrication

#### 3 Credits (2+4P)

Instruction and skill development in process and procedures of metal fusion, including gas and electric welding techniques, safety, and oxy-acetylene cutting and welding. Designed to improve mechanical skills needed in agriculturally related occupations in education and industry.

#### Learning Outcomes

1. To develop students understanding and appreciation for metal fabrication, design and teaching.
2. To develop in the student an adequate level of competence in shop work techniques, so that the student may be able to properly teach and demonstrate multiple metal fabrication techniques to others who may use them as a mean of earning a living.
3. To develop the student's fundamental techniques in shielded metal arc welding, oxy-acetylene welding and cutting operations, metal inert gas welding (MIG), and gas tungsten-arc welding as needed in repair and construction of agricultural equipment.
4. Student will understand appropriate shop management techniques and have an appreciation for mechanized agriculture.
5. To assist the student in developing an understanding and comprehension of the fundamental principles that apply to the area of basic shop work included in this course; such as proper selection of electrodes, oxy-acetylene filler rods, welding processes best suited for given welding conditions, the proper tool for the job, etc.
6. To develop in the student comprehension of safety practices that apply to the areas of basic shop work, tools, and equipment required in the course.

### AXED 2130. Early Field-Based Experience

#### 2 Credits (2)

First Hand view of the roles of professional educators through field experiences with Cooperative Extension or other government agencies. Includes 4 weeks of classroom instruction and 30 hours of observation in a work setting. Consent of Instructor required. Restricted to Las Cruces campus only.

#### Learning Outcomes

1. Identify successful characteristics, tips and strategies that an agricultural education professional may use as part of their program.
2. Identify key components of an agricultural education program
3. Actively observe a local agricultural education program.
4. Identify ways that your agency program networks and interacts with clientele and community

### AXED 2996. Special Topics

#### 1-4 Credits (1-4)

Specific subjects and credits to be announced in the Schedule of Classes. Student can only take up to 6 credits per semester, and will not be able to have more than 12 credits count towards their degree. May be repeated up to 12 credits.

**Learning Outcomes**

1. Varies

**AXED 3105. Introduction to Special Education in Career and Technical Education****3 Credits (3)**

Characteristics, identification, and educational needs of exceptional learners. Attention is given to the various types of programs serving exceptional learners. Designed for all professional personnel who work with exceptional learners. Specific strategies for working with students with special needs in a shop or laboratory setting within the Career and Technical Education environment will be included.

**Learning Outcomes**

1. Discuss historical and current legislation pertaining to exceptional learners and their families and its impact on professional practice in the field.
2. Discuss historical and current legislation pertaining to exceptional learners and their families and its impact on professional practice in the field.
3. Explain the major components of an IEP and its processes, as well as the roles of learners, families and professionals on the team.
4. Discuss the different service delivery models and discuss the principles, practices, and pragmatics of inclusion co-teaching.
5. Analyze the disability categories under IDEA, 2004; characteristics, etiology, and diagnostic criteria.
6. Examine educational considerations for exceptional learners (educational approaches [Universal design and differentiated instruction], assistive technology, accommodations, modifications, and related supports and services).
7. Employ culturally responsive evidence-based practices to create family/school/community partnerships to promote academic achievement and prepare students for their post-school transitions.
8. Evaluate and synthesize research literature on a selected topic from current special education research.
9. Develop hands-on laboratory activities and educational strategies that are appropriate for a wide variety of learners.

**AXED 3115. Small Engine Technology****3 Credits (2+2P)**

Development of competencies in small gasoline engines; theory, operation, design, maintenance and safety. Designed for any major wishing to improve mechanical skills needed in agriculturally related occupations in education and industry. May be repeated up to 3 credits.

**AXED 3120. Agricultural Structures****3 Credits (2+3P)**

Selection and use of agricultural building materials. Design, construction, and maintenance of agricultural structures. Development of competencies in carpentry, concrete, electricity, masonry, and safety. Designed for any major wishing to improve mechanical skills needed in agriculturally related occupations in education and industry. May be repeated up to 3 credits.

**AXED 3130. Advanced Technology in the Agricultural Mechanization****3 Credits (2+3P)**

Students will construct a project in the area of agricultural mechanization under the direction of instructor. Project must be completed within a semester and of sufficient complexity for 3 credits.

**Prerequisite:** AXED 1130 and AXED 2110 or consent of instructor.

**AXED 3150. Philosophy and Methods of Contests****3 Credits (3)**

Covers the roles that career development events (contests) play in agricultural and technology education and in extension programs. Topics include competition and cooperation, winning and losing, ethics, use of community resources, and academic and employability skills taught through contests. Coaching as a teaching method is introduced and expanded. Students will assist with the coordination of various career development events. May be repeated up to 3 credits.

**AXED 3210V. John Muir: Lessons in Sustainability****3 Credits (3)**

This course examines the life of John Muir in the context of sustainability. Muir was a farmer, inventor, explorer, botanist, glaciologist, conservationist, and noted nature author. He was influential in the National Parks movement and in starting the Sierra Club. Living in the natural world influenced his faith and philosophy. By examining his life and the themes that shaped it, students will develop an understanding of what it means to live sustainably and to contribute beyond their personal lives to a sustainable future. May be repeated up to 3 credits.

**AXED 3996. Special Topics****1-4 Credits (1-4)**

Course addresses specific subjects and issues as identified by department. Topics and credits to be announced in the Schedule of Classes. Students can only take up to 4 credits per semester and no more than 6 credits of the course may be applied to a degree. May be repeated up to 12 credits.

**Learning Outcomes**

1. Various

**AXED 4110. Management of Change, Diffusion, and Adoption of Innovations****3 Credits (3)**

Factors that influence the rates of diffusion and adoption of innovations. Consequences of adopting or rejecting innovations. Processes by which change agents influence introduction and adoption of innovations.

Taught with AXED 5110. May be repeated up to 3 credits.

**Learning Outcomes**

1. Critically examine the adoption-diffusion model. Included are issues such as social class differentials in the dissemination of ideas and technology, non-adoption as a form of behavior, social and economic constraints on adoption behavior, and the consequences of adoption at both the individual and social levels.
2. Demonstrate understanding of how the rapid pace of change in technology and applied science may have good and bad outcomes.
3. Discuss the dissemination of new ideas and technology within various social units.
4. Discuss the applications of the adoption-diffusion model from the perspective of the change agent.
5. Enhance the development of leadership skills required to work with people in times of change.

**AXED 4210. Curriculum Development and Assessment in Agricultural Education****3 Credits (3)**

This course prepares students to develop curriculum, design lessons, and prepare appropriate assessments in an agricultural education setting. An emphasis will be placed on the developing curriculum using the currently established resources that are available to agriculture teachers.

**Prerequisite:** 2.5 GPA.

**AXED 4215. Developing Excellent Programs in Career and Technical Education****3 Credits (3)**

This course prepares students to effectively manage Supervised Agricultural Experiences (SAEs) as part of a comprehensive agricultural education program. Participants will learn strategies for guiding students in planning and conducting meaningful SAEs, utilizing the Agricultural Experience Tracker (AET) for recordkeeping and progress tracking, and developing high-quality award applications for proficiency awards, degrees, and other recognitions. Emphasis will be placed on integrating SAEs into classroom instruction and FFA activities to support the three-component model of agricultural education.

#### **Learning Outcomes**

1. Recognize the underlying philosophy of the SAE/FFA as an integral part of the total agricultural education program.
2. Describe ethical behavior as an FFA advisor and agricultural educator, including the proper management of finances.
3. Develop a personal philosophy for implementing SAE/FFA into the total agricultural education program.
4. Identify principles and practices for developing and conducting SAE programs.
5. Identify the importance of effectively supervising student SAEs, including safety considerations.
6. Apply record keeping skills in the use of the AET record book system.
7. Interpret the types of awards offered through the State and National FFA Organization.
8. Describe various opportunities, offered in the total agricultural education program at the local, state, and national level.

#### **AXED 4220. Methods for Teaching Agricultural and Technology Education 3 Credits (3)**

Methods of instruction and presentation, selection of teaching aids and support materials, classroom management, development of a complete educational program, and microteaching experiences. May be repeated up to 3 credits.

**Prerequisite:** GPA of 2.5 or above.

#### **AXED 4230. Directed Teaching in Agricultural or Technology Education 15 Credits (15)**

Semester-long off-campus professional experience in directed teaching and observation provided in selected centers under secondary agricultural or technology education supervising teachers. Consent of Instructor required.

**Prerequisite:** AXED 4215, AXED 4220 and consent of instructor.

#### **AXED 4235. Directed Teaching in Extension Education 3-12 Credits (3-12)**

Four-to-fourteen-week, professional experiences in directed teaching and observation provided in cooperative extension at the county, regional, or state level. Consent of instructor required. May be repeated up to 12 credits.

#### **AXED 4330. Content Area Literacies 3 Credits (3)**

Surveys integrated reading/writing/discursive practices in middle/secondary content areas.

#### **Learning Outcomes**

1. Analyze literacy processes, as they pertain to adolescent learners.
2. Discuss current trends and issues in content area literacy instruction with a specific focus on practices that promote achievement and equity.
3. Evaluate instructional practices that help students use reading, writing, speaking, listening, viewing and visually representing to learn the content areas.

4. Illustrate ethical reasoning and decision making in your approach to content area literacy education.
5. Integrate research, reflection, and best practices that positively impact students in a diverse society.

#### **AXED 4510. Introduction to Research Methods 3 Credits (3)**

Introduction to research design and methodology in education and behavioral sciences. Overview of common research designs and data collection strategies. Prepares students to critique published research and understand basic skills including hypothesis development and conducting a literature search. Students must be in junior standing to enroll. May be repeated up to 3 credits.

#### **AXED 4520. Methods in Career and Technical Laboratory Instruction 2 Credits (2)**

For students planning to teach agricultural or technology education at a secondary or postsecondary level. Focus on planning, delivering, and evaluating instruction in laboratories; and on CPR, first aid, and NCCER certifications. Laboratory safety and tool, equipment, and laboratory management systems are also emphasized. Restricted to AXED Majors. May be repeated up to 2 credits.

#### **AXED 4610. Leadership On Agricultural and Natural Resource Issues 3 Credits (3)**

Investigates leadership concepts and group dynamics as they relate to a changing world and complex agricultural and natural resource issues. Topics include emotional intelligence, leading change, political leadership, facilitating agreement, team building, and managing conflict in agricultural and natural resource settings. May be repeated up to 3 credits.

#### **AXED 4620. Methods of Teaching Biological, Earth and Physical Sciences in Agriculture 3 Credits (3)**

Students learn to set up and teach in a modular agriscience laboratory, utilizing a variety of technologies. Modules covered focus on incorporating biological, earth and physical sciences into agricultural instruction and may include: Tissue culture, animal anatomy, hydroponics microscopy, electrophoresis, microbiology, soils and plant nutrients, water quality, water systems, entomology, integrated pest management, and renewable energy applications. Students develop their own modules and/or experiments.

#### **AXED 4710. 4-H Youth Development 1 Credit (1)**

On-line course explores 4-H Youth Development as an integral part of the Cooperative Extension Service. Topics to be addressed include mission, philosophy, delivery modes, audiences and partnerships. Course is relevant for anyone interested in pursuing a career in Cooperative Extension. May be repeated up to 1 credit.

#### **AXED 4715. The FFA Organization: An Overview 1 Credit (1)**

Online course addressing the history, mission, philosophy and structure of the New Mexico and National FFA Organizations and their relationship to supervised agriculture experiences and the agricultural education curriculum. Course is relevant for anyone interested in pursuing a career in agricultural education. May be repeated up to 1 credit.

#### **AXED 4991. Undergraduate Research 1-4 Credits (1-4)**

Research experience in agricultural, extension, and technology education with applications to selected issues and problems. May be repeated up to 4 credits.

**AXED 4997. Independent Study in Agricultural, Extension, or Technology Education****1-3 Credits (1-3)**

Specific subjects are agreed upon by the student and instructor. Students must be juniors or seniors to enroll. May be repeated up to 6 credits.

**AXED 5105. Introduction to Special Education in Career and Technical Education****3 Credits (3)**

Characteristics, identification, and educational needs of exceptional learners. Attention is given to the various types of programs serving exceptional learners. Designed for all professional personnel who work with exceptional learners. Specific strategies for working with students with special needs in a shop or laboratory setting within the Career and Technical Education environment will be included.

**Learning Outcomes**

1. Discuss historical and current legislation pertaining to exceptional learners and their families and its impact on professional practice in the field.
2. Discuss historical and current legislation pertaining to exceptional learners and their families and its impact on professional practice in the field.
3. Explain the major components of an IEP and its processes, as well as the roles of learners, families and professionals on the team.
4. Discuss the different service delivery models and discuss the principles, practices, and pragmatics of inclusion co-teaching.
5. Analyze the disability categories under IDEA, 2004: characteristics, etiology, and diagnostic criteria.
6. Examine educational considerations for exceptional learners (educational approaches [Universal design and differentiated instruction], assistive technology, accommodations/modifications, and related supports and services).
7. Employ culturally responsive evidence-based practices to create family/school/community partnerships to promote academic achievement and prepare students for their post-school transitions.
8. Evaluate and synthesize research literature on a selected topic from current special education research.
9. Develop hands-on laboratory activities and educational strategies that are appropriate for a wide variety of learners.

**AXED 5110. Management of Change, Diffusion, and Adoption of Innovations****3 Credits (3)**

Factors that influence rates of diffusion and adoption of innovations. Consequences of adopting or rejecting innovations. Processes by which change agents influence introduction and adoption of innovations. Taught with AXED 4110 with differential assignments for graduate students. May be repeated up to 3 credits.

**Learning Outcomes**

1. Critically examine the adoption-diffusion model. Included are issues such as social class differentials in the dissemination of ideas and technology, non-adoption as a form of behavior, social and economic constraints on adoption behavior, and the consequences of adoption at both the individual and social levels.
2. Demonstrate understanding of how the rapid pace of change in technology and applied science may have good and bad outcomes.
3. Discuss the dissemination of new ideas and technology within various social units.
4. Discuss the applications of the adoption-diffusion model from the perspective of the change agent.

5. Enhance the development of leadership skills required to work with people in times of change.

**AXED 5130. Advanced Agricultural Mechanization****3 Credits (3)**

This course provides an overview of advanced agriculture mechanization techniques and concepts. Precision farming tools and applications will be introduced, and hands-on activities will be utilized. A discussion about applications and benefits will frame the course lectures.

**Learning Outcomes**

1. Describe and classify various precision agriculture software/hardware technologies
2. Demonstrate usage of various precision agriculture technologies
3. Understand decision making processes associated with implementation of precision agriculture technologies
4. Analyze the costs, time, and application of precision agriculture technologies

**AXED 5150. Strategic Communications Campaigns and Evaluation****3 Credits (3)**

Client-based marketing and communication needs for stakeholders in agricultural and life sciences. Students will learn brand awareness for agricultural stakeholders by developing a campaign of communications and marketing materials using multiple channels (e.g., written, visual, social). Students will also evaluate the materials for their audience reach, visibility, and effectiveness. Strategic communications involve planning, prioritizing, and evaluating. Students will gain experience implementing these needs with a real-world client to keep materials relevant to industry demands. May be repeated up to 3 credits.

**Learning Outcomes**

1. Identify communications-related needs with a client or stakeholder in the food, agricultural, natural resources, and human (FANH) sciences.
2. Define priority communications areas to address client or stakeholder needs.
3. Direct a communications plan with channels, tactics, steps, and timelines.
4. Develop a campaign of communications materials (e.g., written, visual, social) around a client's needs.
5. Evaluate the reach, visibility, and effectiveness of the communications materials.
6. Manage a client's brand with desired audiences through establishing, promoting, and reinforcing messages.
7. Publish portfolio materials showcasing the client's brand.

**AXED 5155. Youth Program Development and Management****3 Credits (3)**

Designed for professionals involved in youth group activities. Basic concepts in planning, conducting, and managing educational youth programs in a variety of organizations. Taught with AXED 415 with differentiated assignments for graduate students. May be repeated up to 3 credits.

**AXED 5160. Teaching Adults in Nonformal Settings****3 Credits (3)**

The adult and postsecondary learner; adult learning styles and principles; use of community resources and problem-solving techniques; and learning strategies for adults in formal and nonformal education. Taught with AXED 430 with differentiated assignments for graduate students. May be repeated up to 3 credits.

**AXED 5165. History and Philosophy of Agricultural and Extension Education****3 Credits (3)**

History and Philosophy of Agricultural and Extension Education serves as a foundational core of graduate studies in Agricultural and Extension Education. The design of the course is to acquaint the student with a broad perspective of cultural and historical conditions that have shaped both education and agricultural education as we know it today. The primary purpose of this course is to explore the nature of selected philosophical concepts and philosophers and to evaluate their influence upon education and agricultural/extension education in the United States. In addition to philosophical influences, students will examine the historical events and governmental laws and policies that have evolved and developed our educational system of today.

**Learning Outcomes**

1. Understand the principles of philosophy in education and agricultural and extension education.
2. Recognize the influence of philosophers and philosophical documents upon education and agricultural and extension education.
3. Analyze the historical foundations that have established our modern educational system.
4. Develop a personal philosophy regarding education and agricultural education.

**AXED 5170. Keys for Agricultural and Rural Development****3 Credits (3)**

Introduction to concepts of development, the process of change, key factors that contribute to agricultural and rural development in a community, and strategies employed to effect change with implications for international students or domestic students planning to work internationally. May be repeated up to 3 credits.

**AXED 5210. Curriculum Development and Assessment in Agricultural Education****3 Credits (3)**

This course prepares students to develop curriculum, design lessons, and prepare appropriate assessments in an agricultural education setting. An emphasis will be placed on the developing curriculum using the currently established resources that are available to agriculture teachers.

**Prerequisite:** 2.5 GPA.

**AXED 5215. Developing Excellent Programs in Career and Technical Education****3 Credits (3)**

Students learn to develop excellence in the three components of a successful secondary school program in career and technical education: classroom and laboratory instruction, career and technical student organizations, and career development activities. Community-based program planning, utilizing partners, program marketing, and professional development are addressed as strategies for achieving excellence. Methods of obtaining financing and maintaining accountability of the program are discussed. Taught with AXED 445 with differentiated assignments for graduate students. May be repeated up to 3 credits.

**AXED 5220. Methods for Teaching Agricultural and Technology Education****3 Credits (3)**

Methods of instruction and presentation, selection of teaching aids and support materials, classroom management, development of a complete educational program, and microteaching experiences. Taught with AXED 446. May be repeated up to 3 credits.

**Prerequisite:** GPA of 3.0 or above.

**AXED 5230. Directed Teaching in Agricultural or Technology Education****4-9 Credits (4-9)**

Semester-long off-campus professional experience in directed teaching and observation provided in selected centers under secondary agricultural and technology supervising teachers. Students need to have completed a teaching methods class prior to enrolling in this course. Consent of Instructor required.

**AXED 5235. Directed Teaching in Extension Education****4-9 Credits (4-9)**

Four- to fourteen-week professional experiences in directed teaching and observation provided in cooperative extension at the county, regional, or state level. Taught with AXED 448 with reduced credit hours for graduate students. Restricted to AXED majors. May be repeated up to 9 credits.

**AXED 5310. New Mexico Water Issues****3 Credits (3)**

Designed for agricultural and natural resource professionals who must educate others or provide leadership on complex water issues in New Mexico. Students will travel to four distinct geographic and cultural regions of the state and study water policies, issues, and delivery technologies in each region. Specific areas covered will be determined by resource professionals who will present past, current and future issues involved in the distribution of water. Urban impacts on water use will also be investigated. May be repeated up to 3 credits.

**AXED 5320. Risk and Crisis Communications in Agricultural, Consumer, and Environmental Sciences****3 Credits (3)**

The purpose of this course is to introduce risk and crisis as interdisciplinary concepts, reviewing theoretical frameworks from a variety of fields and perspectives, such as communication, social psychology and public relations. Students will develop a theoretical understanding of all aspects of strategic communication pertaining to risks. Using readings and reflective writings, you will understand how individuals cognitively process risks and how to leverage trust and knowledge to facilitate public understanding. In addition, you will learn crisis communication and management from an organizational perspective. Using case studies and discussions, students will be able to recommend strategies for managing crises occurred to agricultural and natural resource industries.

**Learning Outcomes**

1. Develop a critical understanding of theoretical and conceptual frameworks related to risk and crisis communications
2. Use an integrated framework to analyze the communication strategies used by the agricultural and natural resource industries
3. Recommend effective and ethical strategies for managing actual and potential crises

**AXED 5330. Content Area Literacies****3 Credits (3)**

Surveys integrated reading/writing/discursive practices in middle/secondary content areas.

**Learning Outcomes**

1. Analyze literacy processes, as they pertain to adolescent learners.
2. Discuss current trends and issues in content area literacy instruction with a specific focus on practices that promote achievement and equity.
3. Evaluate instructional practices that help students use reading, writing, speaking, listening, viewing and visually representing to learn the content areas.
4. Illustrate ethical reasoning and decision making in your approach to content area literacy education.

5. Integrate research, reflection, and best practices that positively impact students in a diverse society.

#### **AXED 5510. Research Methods**

##### **3 Credits (3)**

Students learn the research process as it is applied to solving problems in the behavioral sciences. Prepares students to conduct and critique research and to diffuse research findings. Implications, applications, and ethics of research also stressed. Students develop a research proposal for a problem of their choice. May be repeated up to 3 credits.

#### **AXED 5515. Data Collection and Analysis**

##### **3 Credits (3)**

Introduction to basic concepts of data collection and analysis. Interpretations from observational studies and controlled experiments. Roles of descriptive and inferential statistics in a complete data analysis. Mean, median, standard deviation, and graphical summaries of data. Correlation and simple regression. One- and two-sample tests and confidence intervals. Chi-square tests and basic analysis of variance. Competency in arithmetic and algebra required. An undergraduate statistics course recommended. May be repeated up to 3 credits.

#### **AXED 5610. Leadership on Agricultural and Natural Resource Issues**

##### **3 Credits (3)**

Investigates leadership concepts and group dynamics as they relate to a changing world and complex agricultural and natural resource issues. Topics include emotional intelligence, leading change, political leadership, facilitating agreement, team building, and managing conflict in agricultural and natural resource settings. Taught with AXED 475 with differential assignments for graduate students. May be repeated up to 3 credits.

#### **AXED 5615. Effective Management of Volunteer Programs**

##### **3 Credits (3)**

For individuals currently involved in, or interested in being involved in, the management and supervision of volunteer programs. Emphasis on practical application, utilizing a research and academic base. Explores the roles, functions, and tasks of volunteers and managers of volunteers including recruitment, orientation and training, supervision, evaluation, recognition and retention. May be repeated up to 3 credits.

#### **AXED 5993. Workshops in Agricultural, Extension, and Technology Education**

##### **1-3 Credits (1-3)**

Workshop procedures applied to current trends in agricultural, extension, and technology education. A maximum of seven credits will count towards a degree. May be repeated up to 7 credits.

#### **AXED 5994. Creative Component**

##### **1-4 Credits (1-4)**

For nonthesis program. Individual investigations or projects, either qualitative or quantitative studies. A maximum of six credits will count towards a degree. May be repeated up to 88 credits.

#### **AXED 5996. Special Topics**

##### **1-4 Credits (1-4)**

Specific subjects and credits to be announced in the Schedule of Classes. Students can take only a maximum of four credits per semester and no more than six credits will count towards a degree. May be repeated up to 6 credits.

#### **AXED 5998. Internship/Cooperative Experience**

##### **1-6 Credits (1-6)**

Supervised professional on-the-job learning experience. May be repeated up to 6 credits.

#### **AXED 5999. Master's Thesis**

##### **1-6 Credits (1-6)**

Thesis. May be repeated up to 88 credits.

#### **AXED 7000. Doctoral Dissertation**

##### **1-9 Credits (1-9)**

Independent research planned, conducted and reported in consultation with and the direction of a major professor. Open only to students pursuing graduate study beyond the master's degree level. Offered for variable credit, 1-18 credit hours, maximum of 18 credit hours. May be repeated up to 18 credits.

**Prerequisite:** Graduate Advisor Approval.

##### **Learning Outcomes**

1. Identify/define problems pertinent to the discipline.
2. Generate questions and/or a hypothesis to provide a solution to the problem.
3. Review and summarize the literature relative to the problem.
4. Apply appropriate research methods and collect data systematically.
5. Conduct research responsibly and ethically.
6. Evaluate, interpret, and analyze a body of empirical data and evidence.
7. Discuss findings in the broader context of the field.
8. Develop and sustain an evidence-based argument.
9. Write and speak critically and coherently.
10. Produce publishable results.

## **Agricultural Communication Courses**

#### **ACOM 1110. Introduction to Agricultural Communication**

##### **3 Credits (3)**

Students will learn about the history and theories of agricultural communications, be introduced to the degree program, explore careers in the field, and examine the role of media in agricultural communications.

May be repeated up to 3 credits.

##### **Learning Outcomes**

1. Identify classes needed in the degree program and relevant clubs.
2. Recall important times in history of agricultural communication and journalism.
3. Comprehend the communication process and identify its components.
4. Identify effective and efficient media for agricultural communication.
5. Analyze the various roles and uses of media in agriculture communication.
6. Apply theories of communication and journalism to class assignments.

#### **ACOM 1120. Introduction to Graphic Design in Agriculture**

##### **3 Credits (3)**

This course focuses on introducing students to creating and critiquing visual communication materials in agricultural communications by developing understanding of visual communications, graphic design and branding principles as well as basic skills in using Adobe Illustrator and Photoshop software.

##### **Learning Outcomes**

1. Understand and demonstrate the correct use of formats, modes, and resolutions when creating or using graphics for various mediums and audiences.
2. Critique and evaluate graphic and photographic design elements in agricultural communications pieces.

3. Demonstrate a working knowledge of the Adobe Illustrator and Photoshop software and their uses for implementing principles of graphic design and branding.

**ACOM 1130G. Effective Leadership and Communication in Agriculture**  
**3 Credits (2+2P)**

Theory and practice in leadership and communication for professionals who must work effectively in leadership and supervisory roles with people in agricultural business, industry, government agencies, and education. Course focuses on contemporary leadership theories. Oral communication skills in informative and persuasive speaking, parliamentary procedure, and for small groups are developed. May be repeated up to 3 credits.

**Learning Outcomes**

1. Understanding Leadership: Definitions of Leadership; Agricultural Education, FFA, Leadership; Leadership Categories; Democratic, Authorization, and Situational Leadership; Personality and Leadership Relations; Developing Leaders; Personal Leadership Development; Ability, Experience, and the Opportunity to Lead; Leadership in the Workplace; Human Relations, Technical, and Conceptual Skills
2. Communication Skills: Communication and Leadership; The Purpose of Communication; Forms of Communication; Communication Barriers and Styles; Verbal and Nonverbal Communication; Feedback; Self Communication and Interpersonal Communication
3. Leading Individuals and Groups: Group Dynamics and Team Building; Democratic Group Leadership; Importance of Groups; Types of Groups; Organizing Groups; Group Dynamics, Development, and Discussion
4. Conducting Successful Meetings: Skills Developed by Bring an Officer; Basic Meeting Functions; Characteristics of a Good Meetings; Planning and Preparing for Meetings; The Meeting Room; Committees; Informative and Motivational Meetings; Group Member Involvement; Officer and Member Responsibilities; Developing a Program of Activities

**ACOM 2120. Photography in Agriculture**  
**3 Credits (1+2P)**

This is a field-based course focused on how to students use the camera as a tool to make the rules of photography and design work for the student's style, creativity, and goals pertaining to application of photography in agricultural communications. Students develop and disseminate a photography portfolio through a variety of communications channels.

**Learning Outcomes**

1. Utilize a DSLR or mirrorless camera to analyze scenarios to effectively curate a body of work that compliments agricultural communications practice
2. Demonstrate working knowledge of camera equipment and photography principles to create visual stories
3. Evaluate and critique imagery for use of photography skills and principles

**ACOM 2998. Early Field- Based Experience in Agricultural Communications**  
**1-4 Credits (1-4)**

This course is designed to help you understand people and how to communicate with people. The key to all journalism or communications-related courses is to understand the audience well enough to know how to speak like them, to them, and to your stakeholders. The most successful communicators exhibit greatness in themselves and in their peers. Communicators cannot do their job if they do not show up with

their best attitude and work ethic. Don't let your audience down, and we will make sure you are equipped to do so. May be repeated up to 6 credits.

**Learning Outcomes**

1. Explain the role of communications in the agricultural or science industries.
2. Develop a communication campaign for an agriculturally related client.
3. Identify key principles of communication channels including newswriting, radio production, and communication plans.
4. Create effective internship application materials to meet needs in the industry.
5. Design a job portfolio that includes examples of communications experience.

**ACOM 3110. Agricultural Communications**  
**3 Credits (3)**

Principles and practical experience in news writing, radio production, newsletter design, public meeting presentations, video productions, graphics, and public relations activities, especially as related to the fields of agriculture and family and consumer sciences.

**ACOM 3115. Global Issues in Agricultural Communications and Marketing**  
**3 Credits (3)**

Global perspectives related to international agricultural communications and marketing. The course will provide real-world settings for students to advance their awareness of international issues influencing marketing and trade in the United States and abroad. The course will expose students to high-impact learning, research skill development, communication skill development with a global mindset, and international travel. May be repeated up to 6 credits.

**Learning Outcomes**

1. Explain the role of communications and marketing in international agriculture.
2. Develop an awareness of global agricultural issues and how they impact domestic and international trade.
3. Increase awareness of global perspectives in agriculture.
4. Discover cultural similarities and differences within the U.S. and the selected country.
5. Investigate agricultural communications and marketing issues using an applied perspective.
6. Communicate course experiences through reflective analyses, photojournalism blog entries, social media campaigns, and presentations.

**ACOM 3125. Website User Experience Design in Agriculture**  
**3 Credits (3)**

The purpose of this course is for students acquire user experience development, coding and web design skills in order to create a live personal portfolio website that demonstrates their professional skills and experiences in agriculture.

**Learning Outcomes**

1. Evaluate websites based on user experience principles
2. Use the fundamentals of HTML and CSS to edit code
3. Implement user experience principles in website design
4. Develop a website using WordPress
5. Explain and justify web design decisions

**ACOM 3150. Communications Campaigns in Agriculture**  
**3 Credits (3)**

Client-based marketing and communication needs for stakeholders in agricultural and life sciences. Students will learn brand awareness for agricultural stakeholders by developing a campaign of communications and marketing materials using multiple modes (e.g., written, visual, social). Students in this course will gain an overall understanding of the agricultural communications industry by developing portfolio materials, prepare for the job and internship search process, and identify the skills necessary to grow in and contribute to a communications profession.

#### **Learning Outcomes**

1. Students will be able to identify communications-related needs with a client or stakeholder in the food, fiber, and natural resources industries.
2. Direct a communications plan with channels, tactics, steps, and timelines for a client.
3. Develop a campaign of communications materials (e.g., written, visual, social) around a client's needs.
4. Manage a client's brand with desired audiences through establishing, promoting, and reinforcing messages.

#### **ACOM 3160V. Communicating Agriculture & Science to the Public 3 Credits (3)**

Principles and practical experience in general communications channels (i.e., news writing, radio production, newsletter design, public meeting presentations, video productions, graphics, and public relations activities) related to the fields of agricultural, consumer, or environmental sciences. Students in this course will gain an overall understanding of the agricultural communications industry and identify the skills necessary to grow in and contribute to a communications profession.

#### **Learning Outcomes**

1. Explain the role of communications in the agricultural, consumer, or environmental science industries.
2. Develop a communication campaign for an agricultural, consumer, or environmental science related client.
3. Identify key principles of communication channels including news writing, radio production, and communication plans.
4. Design a social media campaign including Instagram, Facebook, Twitter, and/or other emerging platforms.
5. Develop skills in media communications including public relations, conducting radio and television interviews, developing interview skills and identifying the needs of an audience.
6. Create effective internship application materials to meet needs in the industry.
7. Design a job portfolio that includes examples of communications experience.
8. Examine social, ethical, and legal issues related to communicating components related to the agricultural, consumer, and environmental science industries.
9. Conduct an audience analysis of key issue related to the agricultural, consumer, and environmental science industries by analyzing demographics, psychographics, sociographics, and geographics of affiliated audience personas.

#### **ACOM 4115. Agricultural and Scientific Publications 3 Credits (3)**

Learn and gain experience with the principles and concepts of designing, writing, editing, producing and distributing a student insert to the ACES Magazine, including practical applications of writing feature articles, magazine design, layout and graphics.

#### **Learning Outcomes**

1. Execute the steps necessary to be a freelance writer.
2. Identify feature story ideas, contact sources and develop publishable stories.
3. Compare and contrast the varying types of publication materials (connection/spotlights, feature stories, social media sprints, etc.).
4. Comprehend publication design principles and current practices used in print communication industries.
5. Create, produce, publish and publicize a print magazine.
6. Connect with an audience through soft news.

#### **ACOM 4120. Advanced Graphic Design and Layout in Agriculture 3 Credits (3)**

This class provides an in-depth examination of visual communication principles and theories, design applications, and design topics relevant to the agricultural industry. Students will learn how to more deeply evaluate designs and layouts, create effective design pieces for targeted agricultural audiences, and further utilize the Adobe Creative Cloud software.

#### **Learning Outcomes**

1. Analyze and apply the principles underlying effective graphic design and layout
2. Recognize and discuss communication and visual theories for developing effective designs and layouts for intended purposes and audiences
3. Demonstrate an extensive working knowledge of Adobe Illustrator, Photoshop, and InDesign to create effective designs for both print and digital platforms

#### **ACOM 4130. Strategic Brand Identity & Design in Agriculture 3 Credits (3)**

The purpose of this course is for students to develop extensive understanding of strategic and visual theory and principles specific to branding as a critical aspect of business development in all aspects of agriculture and natural resources. Students will utilize research and Adobe Creative Cloud to design targeted brand strategy, client brief, and design strategy to effectively build a client pitch.

**Prerequisite:** ACOM 1120.

#### **Learning Outcomes**

1. Articulate the significance of utilizing brand identity for differentiation
2. Apply extensive knowledge of visual and brand theory, principles, strategy and application to various contexts in agriculture and natural resources
3. Research, design and pitch a brand strategy, client brief and design strategy

#### **ACOM 4998. Internship in Agricultural Communications 3-12 Credits (3-12)**

The experiential learning experience selected by students and approved by their academic advisor will form the basis of this course. Students will apply problem-solving skills, communication skills, and disciplinary knowledge through an internship related to agricultural communications. During the internship, students will gain real-world experience in their specific field of interest within the discipline. May be repeated up to 12 credits.

#### **Learning Outcomes**

1. Synthesize discipline-specific knowledge and its application to real-world contexts
2. Design and implement solutions to meet project-related tasks

3. Produce professional-quality deliverables for the employer and for the course
4. Handle a high level of responsibility with professionalism and care in preparation and presentation

**ACOM 5115. Global Issues in Agricultural Communications and Marketing**

**3 Credits (3)**

Graduate-level course broadening global perspectives related to international agricultural communications and marketing. The course will provide real-world settings for students to advance their awareness of international issues influencing marketing and trade in the United States and abroad. The course will expose students to high-impact learning, research skill development, communication skill development with a global mindset, and international travel. May be repeated up to 6 credits.

**Learning Outcomes**

1. Explain the role of communications and marketing in international agriculture.
2. Develop an awareness of global agricultural issues and how they impact domestic and international trade.
3. Increase awareness of global perspectives in agriculture.
4. Discover cultural similarities and differences within the U.S. and the selected country.
5. Investigate communications and marketing issues using an applied perspective.
6. Communicate course experiences through reflective analyses, photojournalism blog entries, social media campaigns, and presentations.
7. Research and dissemination information regarding international issues in agriculture using critical thinking skills.

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