AGRICULTURAL AND EXTENSION EDUCATION

Undergraduate Program Information

The department offers a broad-based 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. Example occupations the department prepares its students to enter are agriculture 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.

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

- Agricultural or Technology Teacher Education,
- Extension Education,
- International Extension and Development, and
- Adult Non-formal Education.

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 (http://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/agricultural-economics-business);
- agricultural mechanics;
- animal and range sciences (http://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/animal-range-sciences);
- entomology, plant pathology and weed science (http://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/entomology-science);
- fish, wildlife and conservation ecology (http://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/fish-wildlife-conservation-ecology);
- engineering (http://catalogs.nmsu.edu/nmsu/engineering);
- also plant and environmental sciences (http://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 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.

The above requested materials should be sent directly to the department. Do not send to the Graduate School as this will cause a delay on your admission status.

Courses in research methods, teaching methods and data collection and analysis; a graduate seminar; and a thesis or creative component are required for the major. Two 9 credit minors are available to students completing major work in other departments.

A minimum of 30 semester credits (including 4-6 credits of thesis) is required under the thesis plan. A non-thesis plan is available and requires 32 semester credits of course work (includes a focused creative component). Both plans require a final oral examination.

Flexibility in each program allows students to pursue professional interests and to develop specialized competencies in agricultural and extension education, technology education, and in technical and scientific areas. The department delivers courses in evening, weekend and distance formats (go to http://distance.nmsu.edu and click on degree programs, and 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.

Degrees for the Department

Agricultural and Community Development - Bachelor of Science in Agriculture (http://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/agricultural-extension-education/agricultural-community-development-bachelor-science-agriculture)

Agricultural and Extension Education - Bachelor of Science in Agriculture (http://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/agricultural-extension-education-agricultural-extension-education-bachelor-science-agriculture)


Minors for the Department


Agricultural and Extension Education - Graduate Minor (http://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/agricultural-extension-education-agricultural-extension-education-graduate-minor)
International Agricultural Development and Extension - Graduate Minor
(http://catalogs.nmsu.edu/nmsu/agricultural-consumer-environmental-sciences/agricultural-extension-education/international-agricultural-development-extension-graduate-minor)

Professor, Frank E. Hodnett, Department Head

Professors Dormody, Hodnett, Seever, VanLeeuwen; Associate Professor Rosencrans, Assistant Professor Easterly

F. Hodnett, Department Head, Ph.D. (New Mexico State) – youth development, youth leadership, youth program development; B. Chamberlin, Ph.D. (University of Virginia) – informal and non-formal learning, educational media design; T. J. Dormody, Ph.D. (Cornell) – agricultural education, leadership, and agricultural communications; R. G. (Tre) Easterly, Ph.D (University of Florida) – agricultural education, pre-service teacher preparation, teacher professional development, J. Gleason, Ed.D. (Virginia Tech) – instructional technology, agricultural communications, and multimedia education; C. Rosencrans, Ph.D. (Iowa State) – agricultural mechanics, technology education and youth development; B. Scevers, Ph.D. (Ohio State) – adult and extension education; P. Skelton, Ph.D. (University of Nebraska) – youth development, sustainable agriculture and natural resource management; D. VanLeeuwen, Ph.D. (Oregon State) – statistics and research design

Agricultural Extension Education

AXED 100. Introduction to Agricultural, Extension, and Technology Education
3 Credits
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.

AXED 105. 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.

AXED 200. Special Topics
1-4 Credits
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester. No more than 6 credits toward degree.

AXED 201G. Effective Leadership and Communication in Agricultural Organizations
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.

AXED 205. Metal Technology-Fabrication
3 Credits (2+4P)
Processes and procedures of metal fusion, including gas and electric welding techniques and safety. Designed for any major wishing to improve mechanical skills needed in agriculturally related occupations in education and industry.

AXED 230. Early Field-Based Experience in Extension and Industry
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.

AXED 232. Early Field-Based Experience in Agricultural and Technology Education
2 Credits
First-hand view of the roles of professional educators through field experiences in a secondary agricultural or technology education setting. Includes 4 weeks of classroom instruction and 30 hours of observations in a classroom setting. Consent of Instructor required.

AXED 240. Introduction to Agricultural Communication
3 Credits
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

AXED 300. Special Topics
1-4 Credits
Course addresses specific subjects and issues as identified by department. Topics and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester. No more than 6 credits may be applied to a degree.

AXED 303. 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.

AXED 331. Agricultural Structures
3 Credits (2+3P)

AXED 348. 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(s): AXED 105 and 205 or consent of instructor.

AXED 360. Agricultural Communications
3 Credits
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.
AXED 380. Philosophy and Methods of Contests
3 Credits
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 400. The Diffusion and Adoption of Agricultural Innovations
3 Credits
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. Same as AXED 500.

AXED 415. Youth Program Development and Management
3 Credits
Designed for professionals involved in youth group activities. Basic concepts in planning, conducting, and managing educational youth programs in a variety of organizations.

AXED 430. Teaching Adults in Nonformal Settings
3 Credits
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.

AXED 436. Keys for Agricultural and Rural Development
3 Credits
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.

AXED 443. Curriculum Development and Assessment in Agricultural Education
3 Credits
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. Restricted to: AXED majors.
Prerequisite(s): 2.5 GPA.

AXED 444. Planning and Methods in Nonformal Education
3 Credits
Identifying trends and resources of a community and planning community-based extension and nonformal education programs. Preliminary methods for teaching and evaluating nonformal education programs.

AXED 445. Developing Excellent Programs in Career and Technical Education
3 Credits
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 for the program are discussed.

AXED 446. Methods for Teaching Agricultural and Technology Education
3 Credits
Methods of instruction and presentation, selection of teaching aids and support materials, classroom management, development of a complete educational program, and microteaching experiences. Restricted to AXED Majors
Prerequisite: GPA of 2.5 or above.

AXED 447. Directed Teaching in Agricultural or Technology Education
15 Credits
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. Restricted to: AXED majors.
Prerequisite(s): AXED 445, 446 and consent of instructor.

AXED 448. 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.

AXED 449. Directed Field Experience in Agricultural or Technology Education
3-12 Credits (3-12)
Four-to-fourteen-week, supervised learning experience in an approved teaching setting with application to educational, agricultural, technological, communications, public relations, or environmental practices. Consent of instructor required.

AXED 456. Introduction to Research Methods
3 Credits
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.
Prerequisite: junior standing.

AXED 460. Methods in Career and Technical Laboratory Instruction
2 Credits
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.

AXED 466V. John Muir: Lessons in Sustainability
3 Credits
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 influences 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 past.

AXED 475. Leadership On Agricultural and Natural Resource Issues
3 Credits
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.
AXED 480. International Agricultural Development
3 Credits
Introduction to Agricultural topics (products, people, environment, culture, etc) that affect international development. Topics provide students with awareness, knowledge and understanding of teaching, research and service opportunities for those seeking experience or careers in international agricultural development. Taught with AXED 580.

AXED 484. Methods of Teaching Biological, Earth and Physical Sciences in Agriculture
3 Credits
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. May be repeated up to 3 credits.

AXED 486. Effective Management of Volunteer Programs
3 Credits
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.

AXED 488. 4-H Youth Development
1 Credit
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.

AXED 489. The FFA Organization: An Overview
1 Credit
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.

AXED 490. Independent Study in Agricultural, Extension, or Technology Education
1-3 Credits
Specific subjects are agreed upon by the student and instructor. May be repeated for a maximum of 6 credits.
Prerequisites: junior or senior standing and consent of instructor.

AXED 499. Undergraduate Research
1-4 Credits
Research experience in agricultural, extension, and technology education with applications to selected issues and problems.
Prerequisites: consent of instructor.

AXED 500. The Diffusion and Adoption of Agricultural Innovations
3 Credits
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 400 with differential assignments for graduate students.

AXED 515. Youth Program Development and Management
3 Credits
Designed for professionals involved in youth group activities. Basic concepts in planning, conducting, and managing educational youth programs in a variety of organizations. Same as AXED 415 with differentiated assignments for graduate students.

AXED 525. Graduate Teaching Methods
3 Credits
Examines the teaching and learning process, emphasizing the use of appropriate methods for teaching career and technical education subjects to youth or adults in formal and nonformal educational settings. Includes principles of teaching and learning styles, levels of cognition, syllabus development, lesson planning, teaching using a variety of methods, and evaluating students. For students who have no prior education in teaching methods.

AXED 530. Teaching Adults in Nonformal Settings
3 Credits
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. Same as AXED 430 with differentiated assignments for graduate students.

AXED 536. Keys for Agricultural and Rural Development
3 Credits
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.

AXED 543. Curriculum Development and Assessment in Agricultural Education
3 Credits
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. Restricted to: AXED majors.
Prerequisite(s): 2.5 GPA.

AXED 544. Planning and Methods in Nonformal Education
3 Credits
Identifying trends and resources of a community and planning community-based extension and nonformal education programs. Preliminary methods for teaching and evaluating nonformal education programs. Same as AXED 444 with differentiated assignments for graduate students.

AXED 545. Developing Excellent Programs in Career and Technical Education
3 Credits
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. Same as AXED 445 with differentiated assignments for graduate students.
AXED 546. Methods for Teaching Agricultural and Technology Education
3 Credits
Methods of instruction and presentation, selection of teaching aids and support materials, classroom management, development of a complete educational program, and microteaching experiences. Same as AXED 446. Restricted to AXED Majors
Prerequisites: GPA of 3.0 or above.

AXED 547. 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. Consent of Instructor required. Restricted to: AXED majors.
Prerequisite(s): A teaching methods class and consent of instructor.

AXED 548. 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. Same as AXED 448 with reduced credit hours for graduate students. Restricted to majors. Main campus only.
Prerequisite: consent of instructor.

AXED 549. Directed Field Experience in Agricultural or Technology Education
4-9 Credits (4+9P)
A four-to-fourteen-week supervised learning experience in an approved teaching setting with application to educational, agricultural, technological, communications, public relations, or environmental practices. Same as AXED 449 with reduced credit hours for graduate students. Restricted to majors. Main campus only.
Prerequisite: consent of instructor.

AXED 556. Research Methods
3 Credits
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. Same as FCSC 556.

AXED 557. Data Collection and Analysis
3 Credits
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.

AXED 575. Leadership on Agricultural and Natural Resource Issues
3 Credits
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.

AXED 580. International Agricultural Development
3 Credits
Introduction to agricultural topics (products, people, environment, culture, etc.) that affect international development. Topics provide students with awareness, knowledge and understanding of teaching, research, and service opportunities for those seeking experience or careers in international agricultural development and education. Taught with AXED 480.

AXED 586. Effective Management of Volunteer Programs
3 Credits
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. Taught with AXED 486 with differentiated assignments for graduate students.

AXED 590. Special Topics
1-4 Credits
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester. No more than 6 credits toward degree.

AXED 594. Workshops in Agricultural, Extension, and Technology Education
1-3 Credits
Workshop procedures applied to current trends in agricultural, extension, and technology education. Maximum of 7 credits toward a degree.

AXED 595. Internship/Cooperative Experience
1-6 Credits
Supervised professional on-the-job learning experience. Maximum of 6 credits toward a degree.
Prerequisite: Consent of instructor.

AXED 598. Creative Component
1-4 Credits
For nonthesis program. Individual investigations or projects, either qualitative or quantitative studies. Maximum of 6 credits toward a degree.
Prerequisite: consent of instructor.

AXED 599. Master's Thesis
1-6 Credits
Thesis.

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