

# Department of Agricultural Systems Technology and Education

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**Degrees offered:** Bachelor of Science (BS) in Agricultural Education; BS in Agricultural Communication and Journalism (offered jointly with Journalism and Communication Department); BS, Master of Science (MS) in Agricultural Systems Technology; BS in Family and Consumer Sciences Education; Associate of Applied Science (AAS) in Agricultural Machinery Technology; One-year Certificate in Agricultural Machinery Technology

**Undergraduate emphases:** BS—*Agricultural Systems Technology*: Agribusiness and Agricultural Mechanization

**Graduate specializations:** MS—*Agricultural Extension Education*, Agricultural Mechanization, Family and Consumer Sciences Education and Extension, International Agricultural Extension, and Secondary and Postsecondary Agricultural Education

## Undergraduate Programs

### Objectives

The programs offered in the Agricultural Systems Technology and Education Department are for students who are preparing for positions as family and consumer sciences or agricultural education teachers, as well as for positions in family and consumer sciences education or agricultural extension, agricultural mechanization, agribusiness and communication, and agricultural production and management.

The facilities for these programs include laboratories with specially designed equipment for practical instruction in agricultural systems and mechanization, including computer applications, agribusiness, agricultural buildings, engines, electricity, hydraulics, machinery, and repair welding. Family and Consumer Sciences Education students use laboratories equipped for instruction in secondary education, clothing production, textile science, early childhood education, nutrition, and interior design.

### Requirements

#### Departmental Admission Requirements

Admission requirements for the Department of Agricultural Systems Technology and Education are the same as those described for the University on pages 30-35. Students in good standing may apply for admission to the department.

#### Bachelor of Science in Agricultural Education

Preparation in Agricultural Education includes technical agriculture, economics, and business. Students selecting the teaching option will also enroll in principles and techniques of teaching courses.

Students interested in teaching agricultural production and processing, agricultural mechanics, horticulture, or natural resources will be guided into areas of their major interest. Agricultural backgrounds or summer agricultural experiences are necessary for teacher certification.

An application for admission to teacher education should ordinarily be completed before the junior year (see Emma Eccles Jones College of Education and Human Services requirements, page 128). Approval for admission to teacher education is a prerequisite to enrollment in education and psychology courses. A 2.75 GPA is required for admission to the teacher education program.

Requirements for the **Bachelor of Science in Agricultural Education** are listed briefly. For more detailed information on courses and the recommended sequence for taking them, see the major requirement sheet available from the Agricultural Systems Technology and Education Department.

The Agricultural Education major involves four teaching areas, which correspond with the Utah agricultural education program model design. Students must complete the University Studies requirements (see pages 67-75). In addition, students must complete the following courses in preparation for teacher licensure:

#### Professional Education (14 credits)

<b>SCED 3100</b> Motivation and Classroom Management (F,Sp) .....	3
<b>SCED 3210 (CI/DSS)</b> Educational and Multicultural Foundations (F,Sp).....	3
<b>SCED 4200 (CI)</b> Reading, Writing, and Technology (F,Sp) .....	3
<b>SCED 4210</b> Cognition and Evaluation of Student Learning (F,Sp) .....	3
<b>SPED 4000</b> Education of Exceptional Individuals (F,Sp,Su) .....	2

#### Agricultural Education (26 credits)

<b>ASTE 2710</b> Orientation to Agricultural Education (F).....	2
<b>ASTE 3100</b> Leadership Applications in Agricultural Science, Management, and Development (Sp) .....	2
<b>ASTE 3240 (CI)</b> Teaching in Laboratory Settings (Sp).....	3
<b>ASTE 3300</b> Clinical Experience I in Agricultural Education (Sp).....	1
<b>ASTE 3620</b> Managing the FFA and SAE Programs (Sp).....	2
<b>ASTE 4150 (CI)</b> Methods of Teaching Agriculture (F) .....	3
<b>ASTE 4300</b> Clinical Experience II in Agricultural Education (F).....	1
<b>ASTE 5500</b> Agricultural Education Secondary Curriculum Seminar (Sp).....	2
<b>ASTE 5630</b> Agricultural Education Student Teaching in Secondary Schools (Sp).....	10

All students in the Agricultural Education major will complete a core of technical agricultural courses to include:

<b>ASTE 3050 (CI)</b> Technical and Professional Communication Principles in Agriculture (F,Sp) .....	3
<b>ASTE 3080</b> Compact Power Units for Agricultural and Turfgrass Applications (Sp) .....	3
<b>ADVS 1110</b> Introduction to Animal Science (F,Sp).....	4
<b>BIOL 1610</b> Biology I (F).....	4
<b>CHEM 1110 (BPS)</b> General Chemistry I (F,Sp).....	4
<b>PSC 3000</b> Fundamentals of Soil Science (F,Sp).....	4

Students are required to designate a program emphasis for the following areas: Production and Processing; Agricultural Systems; Horticulture; and Natural Resources. Approximately 50 credits in a technical agriculture specialization are required in each of the four program area choices.

# Department of Agricultural Systems Technology and Education

## Emphasis Areas (52-55 credits)

These emphasis areas will *not* appear on a student's transcript. They are emphasis areas approved by the Utah State Office of Education.

### Production and Processing (52-53 credits)

ADVS 1110 Introduction to Animal Science (F,Sp)	4
ADVS 4560 (QI) Principles of Animal Breeding (F)	3
ADVS course	2-3
APEC 3010 (DSS) Introduction to Agricultural Economics and Agribusiness (Sp) (3 cr) or	
APEC 3020 (DSS) Firm Finance and Records Analysis (Sp) (3 cr)	3
ASTE 2200 Electricity in Agricultural Systems (Sp)	3
ASTE 2830 Agribusiness Sales and Marketing (F)	3
ASTE 3030 Metal Welding Processes and Technology in Agriculture (F)	3
ASTE 3040 (QI) Fabrication Practices in Agricultural Buildings (Sp)	2
ASTE 3050 (CI) Technical and Professional Communication Principles in Agriculture (F,Sp)	3
ASTE 3080 Compact Power Units for Agricultural and Turfgrass Applications (Sp)	3
BIOL 1610 Biology I (F)	4
CHEM 1110 (BPS) General Chemistry I (F,Sp)	4
PSC 3000 Fundamentals of Soil Science (F,Sp)	4
PSC 3700 Plant Propagation (F)	4
PSC 4050 Greenhouse Management and Crop Production (Sp)	4
PSC course	3

### Horticulture (55 credits)

ADVS 1110 Introduction to Animal Science (F,Sp)	4
ASTE 2830 Agribusiness Sales and Marketing (F)	3
ASTE 3040 (QI) Fabrication Practices in Agricultural Buildings (Sp)	2
ASTE 3050 (CI) Technical and Professional Communication Principles in Agriculture (F,Sp)	3
ASTE 3080 Compact Power Units for Agricultural and Turfgrass Applications (Sp)	3
BIOL 1610 Biology I (F)	4
CHEM 1110 (BPS) General Chemistry I (F,Sp)	4
PSC 2200 Pest Management Principles and Practices (Sp)	3
PSC 2600 Annual and Perennial Plant Materials (F)	3
PSC 2620 Woody Plant Materials: Trees and Shrubs for the Landscape (F)	3
PSC 3000 Fundamentals of Soil Science (F,Sp)	4
PSC 3010 Basic Flower Arranging (F) (offered through Distance Education <i>only</i> )	2
PSC 3300 Residential Landscapes (Sp)	3
PSC 3700 Plant Propagation (F)	4
PSC 3810 Turfgrass Management (F)	3
PSC 4050 Greenhouse Management and Crop Production (Sp)	4
PSC 4200 Temperate Zone Fruit Production (Sp)	3

### Agricultural Systems (54 credits)

ADVS 1110 Introduction to Animal Science (F,Sp)	4
APEC 3010 (DSS) Introduction to Agricultural Economics and Agribusiness (Sp) (3 cr) or	
APEC 3020 (DSS) Firm Finance and Records Analysis (Sp) (3 cr)	3
ASTE 1010 Introduction to Agricultural Systems Technology (F)	3
ASTE 1640 Agricultural Equipment and Parts Marketing and Communications (F)	3
ASTE 2200 Electricity in Agricultural Systems (Sp)	3
ASTE 3030 Metal Welding Processes and Technology in Agriculture (F)	3
ASTE 3040 (QI) Fabrication Practices in Agricultural Buildings (Sp)	2
ASTE 3050 (CI) Technical and Professional Communication Principles in Agriculture (F,Sp)	3

ASTE 3080 Compact Power Units for Agricultural and Turfgrass Applications (Sp)	3
ASTE 3200 Irrigation Principles and Practices (Sp)	3
ASTE 3600 (QI) Management of Agricultural Machinery Systems (Sp)	3
ASTE 4100 Agricultural Structures and Environment (Sp)	3
ASTE 5260 (CI) Environmental Impacts of Agricultural Systems (F)	3
CHEM 1110 (BPS) General Chemistry I (F,Sp)	4
PHYS 1200 (BPS) Introduction to Physics by Hands-on Exploration	4
PSC 3000 Fundamentals of Soil Science (F,Sp)	4
PSC 4280 Field Crops (F odd)	3

### Natural Resources (54 credits)

ADVS 1110 Introduction to Animal Science (F,Sp)	4
ASTE 3040 (QI) Fabrication Practices in Agricultural Buildings (Sp)	2
ASTE 3050 (CI) Technical and Professional Communication Principles in Agriculture (F,Sp)	3
ASTE 3080 Compact Power Units for Agricultural and Turfgrass Applications (Sp)	3
ASTE 5260 (CI) Environmental Impacts of Agricultural Systems (F)	3
BIOL 1610 Biology I (F)	4
BIOL 1620 (BLS) Biology II (Sp)	4
BIOL 2220 General Ecology (F,Sp)	3
CHEM 1110 (BPS) General Chemistry I (F,Sp)	4
ENVS 2340 (BSS) Natural Resources and Society (F,Sp)	3
ENVS 3600 Living with Wildlife (Sp)	3
PSC 3000 Fundamentals of Soil Science (F,Sp) (4 cr) or	
PSC 4000 Soil and Water Conservation (F) (4 cr)	4
WILD 3600 Wildland Plant Ecology and Identification (F)	4
WILD 3610 Wildland Animal Ecology and Identification (F)	4
WILD 4000 Principles of Rangeland Management (Sp)	3
WILD 4900 Managing Dynamic Ecological Systems (Sp)	3

## Bachelor of Science in Agricultural Systems Technology (AST)

This major has two emphases: *Agribusiness and Agricultural Mechanization*. Preparation in either emphasis includes technical agriculture, economics, and business. The agricultural mechanization emphasis requires additional courses in technical electives and communication skills development.

The Bachelor of Science in Agricultural Systems Technology includes the following courses:

### Technical Requirements (20 credits)

ACCT 2010 Survey of Accounting I (F,Sp,Su)	3
APEC 3010 (DSS) Introduction to Agricultural Economics and Agribusiness (Sp)	3
APEC 3020 (DSS) Firm Finance and Records Analysis (Sp)	3
CHEM 1110 (BPS) General Chemistry I (F,Sp)	4
ECN 1500 (BAI) Introduction to Economic Institutions, History, and Principles (F,Sp,Su)	3
PSC 3000 Fundamentals of Soil Science (F,Sp)	4

### Communications Intensive Courses (6 credits)

ASTE 3050 (CI) Technical and Professional Communication Principles in Agriculture (F,Sp)	3
ASTE 5260 (CI) Environmental Impacts of Agricultural Systems (F)	3

# Department of Agricultural Systems Technology and Education

## Agricultural Systems Courses (24 credits)

ASTE 1010 Introduction to Agricultural Systems Technology (F).....	3
ASTE 2200 Electricity in Agricultural Systems (Sp) .....	3
ASTE 2830 Agribusiness Sales and Marketing (F) .....	3
ASTE 3030 Metal Welding Processes and Technology in Agriculture (F).....	3
ASTE 3080 Compact Power Units for Agricultural and Turfgrass Applications (Sp) .....	3
ASTE 4100 Agricultural Structures and Environment (Sp).....	3
ASTE 4900 Senior Project Research and Creative Opportunity (Sp).....	6

## Designated Electives (24 credits)

Select 24 credits from the following courses. Twelve of these credits must be selected from upper-division (3000-level and above) courses.

ASTE 1610 Agricultural Machinery Engines (F).....	3
ASTE 1615 Agricultural Machinery Engine Laboratory (F).....	3
ASTE 1620 Agricultural Machinery Power Trains (Sp).....	3
ASTE 1625 Agricultural Machinery Power Trains Laboratory (Sp).....	3
ASTE 3040 (QI) Fabrication Practices in Agricultural Buildings (Sp) .....	2
ASTE 3100 Leadership Applications in Agricultural Science, Management, and Development (Sp) .....	2
ASTE 3200 Irrigation Principles and Practices (Sp).....	3
ASTE 3600 (QI) Management of Agricultural Machinery Systems (Sp).....	3
ASTE 3670 Agricultural Equipment Business Management, Marketing, and Communications (Sp).....	3
ASTE 3900 Special Problems in Agricultural Systems Technology and Education (F,Sp,Su) .....	1-6
ASTE 4250 Occupational Experiences in Agriculture (F,Sp,Su) .....	1-6
ASTE 5100 Electrical Controls and Motors for Agri-Industrial Applications (Sp) .....	3
ADVS courses .....	6-12
ACCT courses .....	6-12
APEC courses .....	6-12
FIN and MGT courses .....	12-24
MIS courses.....	6-12
PSC courses.....	12-24

Students will complete a minor in Business or Agribusiness. Additional requirements in Animal Science; Plant and Soil Sciences; and Wildland Resources must also be met. In addition, students must complete the University Studies Requirements (see pages 67-75). Students must complete elective credits to meet the University's requirement of at least 120 credits.

## Agricultural Systems Technology and Agribusiness Composite Major

### Applied Economics and Economics Courses (21 credits)

APEC/ECN 2010 (BSS) Introduction to Microeconomics (F,Sp,Su) .....	3
APEC 3010 (DSS) Introduction to Agricultural Economics and Agribusiness (Sp) .....	3
APEC 3020 (DSS) Firm Finance and Records Analysis (Sp) .....	3
APEC 5010 (QI) Firm Marketing and Price Analysis (F) .....	3
APEC 5015 Firm Management, Planning, and Optimization (F).....	3
ECN 1500 (BAI) Introduction to Economic Institutions, History, and Principles (F,Sp,Su).....	3
ECN 3010 (DSS) Managerial Economics (F,Sp) .....	3

## Agricultural Systems Courses (21 credits)

ASTE 1010 Introduction to Agricultural Systems Technology (F).....	3
ASTE 2200 Electricity in Agricultural Systems (Sp) .....	3
ASTE 3030 Metal Welding Processes and Technology in Agriculture (F) (3 cr) or	
ASTE 4100 Agricultural Structures and Environment (Sp) (3 cr) .....	3
ASTE 3050 (CI) Technical and Professional Communication Principles in Agriculture (F,Sp) .....	3
ASTE 3200 Irrigation Principles and Practices (Sp) (3 cr) or	
ASTE 3080 Compact Power Units for Agricultural and Turfgrass Applications (Sp) (3 cr).....	3
ASTE 3600 (QI) Management of Agricultural Machinery Systems (Sp).....	3
ASTE 5260 (CI) Environmental Impacts of Agricultural Systems (F)....	3

## Technical Requirements (27 credits)

ACCT 2010 Survey of Accounting I (F,Sp,Su).....	3
ACCT 2020 Survey of Accounting II (F,Sp,Su).....	3
CHEM 1010 (BPS) Introduction to Chemistry (F,Sp).....	3
MATH 1050 (QL) College Algebra (F,Sp,Su).....	4
MATH 1100 (QL) Calculus Techniques (F,Sp,Su) .....	3
MGT 2050 Legal and Ethical Environment of Business (F,Sp,Su).....	3
PSC 4000 Soil and Water Conservation (F).....	4
STAT 2300 (QL) Business Statistics (F,Sp,Su) .....	4

## University Studies Requirements

### (not met as part of above requirements) (18 credits)

Communications Literacy (CL1 and CL2) courses .....	6
Breadth Creative Arts (BCA) course.....	3
Breadth Humanities (BHU) course .....	3
Breadth Life Sciences (BLS) course.....	3
Depth Humanities and Creative Arts (DHA) course.....	3
Computer and Information Literacy (CIL) Exam.....	0

## General Electives (24 credits)

Total Credits for Graduation..... 120

## Bachelor of Science in Agricultural Communication and Journalism

To develop a well-rounded agricultural communication professional, the BS degree in Agricultural Communication and Journalism combines courses in journalism with courses in agriculture. Students take coursework in a variety of technical agricultural disciplines, including animal science, plant science, agricultural economics, textiles, and biotechnology. This training provides students with the basic knowledge to draw from as they communicate the importance of the food and fiber industry. This program is designed so that students may complete a dual major in Journalism.

## University Studies—Competency

ENGL 1010 (CL1) Introduction to Writing: Academic Prose (F,Sp,Su) .....	3
ENGL 2010 (CL2) Intermediate Writing: Research Writing in a Persuasive Mode (F,Sp,Su).....	3
(Note: Alternatively, the CL1 and CL2 requirements may be fulfilled through testing. See page 67 for further information.)	
MATH 1050 (QL) College Algebra (F,Sp,Su).....	4

# Department of Agricultural Systems Technology and Education

## University Studies—Breadth

Students must complete a minimum of 18 credits in breadth courses, including one course from each of the six categories (BAI, BCA, BHU, BLS, BPS, and BSS). At least two of these six courses must have a USU prefix. The following courses are suggested for students in the Agricultural Communication and Journalism major.

<b>CHEM 1010 (BPS)</b> Introduction to Chemistry (F,Sp).....	3
<b>ECN 1500 (BAI)</b> Introduction to Economic Institutions, History, and Principles (F,Sp,Su).....	3
<b>JCOM 1500 (BSS)</b> Introduction to Mass Communication (F,Sp) .....	3
<b>USU 1350 (BLS)</b> Integrated Life Science (F,Sp,Su).....	3
Breadth Creative Arts (BCA) course.....	3
Breadth Humanities (BHU) course.....	3

## University Studies—Depth

Two Communications Intensive (CI) courses and one Quantitative Intensive (QI) course are required. Students in the Agricultural Communication and Journalism major must also take one Depth Humanities and Creative Arts (DHA) course and one Depth Social Sciences (DSS) course. The CI requirement may be fulfilled with two of ASTE 3050, 5260, and JCOM 2610 (required for the major). JCOM 4030 (taken as part of the major) will fulfill the DSS requirement.

## Technical Agriculture Courses (18 credits)

<b>ADVS 1110</b> Introduction to Animal Science (F,Sp).....	4
<b>APEC 3010 (DSS)</b> Introduction to Agricultural Economics and Agribusiness (Sp) .....	3
<b>FCSE 3030 (QI)</b> Textile Science.....	4
<b>NFS 2040</b> Introduction to Biotechnology (Sp).....	1
Upper-division College of Agriculture elective courses.....	6

## Agricultural Communication Courses (20 credits)

<b>ASTE 1710</b> Introduction to Agricultural Communication (F).....	3
<b>ASTE 2830</b> Agribusiness Sales and Marketing (F) .....	3
<b>ASTE 2900 (BSS)</b> Humanity in the Food Web (F,Sp).....	3
<b>ASTE 3050 (CI)</b> Technical and Professional Communication Principles in Agriculture (F,Sp) .....	3
<b>ASTE 3100</b> Leadership Applications in Agricultural Science, Management, and Development (Sp) .....	2
<b>ASTE 4900</b> Senior Project: Agricultural Publications (Sp) .....	3
<b>ASTE 5260 (CI)</b> Environmental Impacts of Agricultural Systems (F) .....	3

## Journalism and Communication (15 credits)

<b>JCOM 1130</b> Beginning Newswriting for the Mass Media (F,Sp,Su) .....	3
<b>JCOM 1500 (BSS)</b> Introduction to Mass Communication (F,Sp) .....	3
<b>JCOM 2010 (BSS)</b> Media Smarts: Making Sense of the Information Age (F,Sp).....	3
<b>JCOM 2160 (CI)</b> Introduction to Online Journalism (F,Sp).....	3
<b>JCOM 4030 (DSS)</b> Mass Media Law (F,Sp).....	3

## Public Relations/Corporate Communication Concentration (example)

**Note:** Agricultural Communication and Journalism students may elect to concentrate their coursework within one of the three Journalism major emphases (broadcast/electronic media, print journalism, or public relations/corporate communication), or they may construct an individually designed concentration with the approval of the Journalism and Communication Department faculty.

<b>JCOM 2300</b> Introduction to Public Relations (F,Sp).....	3
<b>JCOM 2310 (CI)</b> Writing for Public Relations (F,Sp) .....	3
<b>JCOM 3300 (DSS)</b> Strategic Research Methods in Public Relations (F,Sp).....	3
<b>JCOM 5300 (CI)</b> Case Studies in Public Relations (F,Sp).....	3
Elective skills course .....	3

## Non-Agriculture/Communication Electives

Additional elective courses in fields *other than* agriculture and communication must be taken to complete the remainder of the minimum 120 credits required for graduation.

## Associate of Applied Science Degree in Agricultural Machinery Technology

The Associate of Applied Science Degree in Agricultural Machinery Technology consists of a minimum of 6 credits of University Studies courses, 45 credits in the major (Agricultural Systems Technology and Education), 9 credits in business or related elective coursework, for a total of not less than 60 credits. The suggested breakdown of coursework is listed below.

## University Studies (6 credits)

Classes will be selected from a minimum of two areas for a total of 6 credits. ENGL 1010, Introduction to Writing: Academic Prose (or an equivalent writing or communications class) must be completed as one of these classes.

## Core Classes (42 credits)

The following 42 credits are required:

<b>ASTE 1010</b> Introduction to Agricultural Systems Technology (F).....	3
<b>ASTE 1120</b> Forage and Harvest Equipment (F).....	3
<b>ASTE 1130</b> Planting and Tillage Equipment (Sp).....	3
<b>ASTE 1610</b> Agricultural Machinery Engines (F).....	3
<b>ASTE 1615</b> Agricultural Machinery Engine Laboratory (F).....	3
<b>ASTE 1620</b> Agricultural Machinery Power Trains (Sp).....	3
<b>ASTE 1625</b> Agricultural Machinery Power Trains Laboratory (Sp).....	3
<b>ASTE 2200</b> Electricity in Agricultural Systems (AC) (Sp).....	3
<b>ASTE 3030</b> Metal Welding Processes and Technology in Agriculture (F).....	3
<b>ASTE 3080</b> Compact Power Units for Agricultural and Turfgrass Applications (Sp) .....	3
<b>ASTE 3600</b> Management of Agricultural Machinery Systems (Sp).....	3
<b>ASTE 3670</b> Agricultural Equipment Business Management, Marketing, and Communications (Sp) .....	3
<b>ASTE 3710</b> Agricultural Machinery Hydraulic Systems and Diagnosis (F) .....	3
<b>ASTE 3720</b> Agricultural DC Electrical Systems and Diagnosis (F).....	3

## Business or Related Elective Classes (select 9 credits)

<b>ADVS 1110</b> Introduction to Animal Science (F,Sp).....	4
<b>ASTE 2250</b> Occupational Experience in Agriculture (F,Sp).....	5
<b>ASTE 2830</b> Agribusiness Sales and Marketing (F) .....	3
<b>ASTE 2900 (BSS)</b> Humanity in the Food Web (F,Sp).....	3
<b>ASTE 2930</b> Individualized Projects in Agricultural Mechanics (F,Sp). 1-3	
<b>ASTE 3040</b> Fabrication Practices in Agricultural Buildings (Sp) .....	2
<b>ASTE 3050</b> Technical and Professional Communication Principles in Agriculture (F,Sp).....	3
<b>ASTE 3100</b> Leadership Applications in Agricultural Science, Management, and Development (Sp) .....	2
<b>ASTE 3200</b> Irrigation Principles and Practices (Sp).....	3
<b>ASTE 3900</b> Special Problems in Agricultural Systems Technology and Education (F,Sp,Su) .....	1-6
<b>ASTE 4100</b> Agricultural Structures and Environment (Sp).....	3
<b>ASTE 5100</b> Electrical Controls and Motors for Agri-Industrial Applications (Sp) .....	3

# Department of Agricultural Systems Technology and Education

<b>ASTE 5260</b> Environmental Impacts of Agricultural Systems (F).....	3
<b>BIOL 1610</b> Biology I (F).....	4
<b>CHEM 1110 (BPS)</b> General Chemistry I (F,Sp).....	4
<b>MATH 1050 (QL)</b> College Algebra (F,Sp,Su).....	4
<b>NR 1010 (BSS)</b> Humans and the Changing Global Environment.....	3
<b>PHYS 1200 (BPS)</b> Introduction to Physics by Hands-on Exploration ...	4
<b>PSC 2200</b> Pest Management Principles and Practices (Sp).....	3
<b>PSC 2620</b> Woody Plant Materials: Trees and Shrubs for the Landscape (F).....	3
<b>PSC 3300</b> Residential Landscapes (Sp).....	3
<b>PSC 3400</b> Landscape Management Principles and Practices (Sp).....	3
<b>PSC 3810</b> Turfgrass Management (F).....	3
<b>PSC 4050</b> Greenhouse Management and Crop Production (Sp).....	4
<b>PSC 5550</b> Weed Biology and Control (F).....	4
<b>WATS 1200 (BLS)</b> Biodiversity and Sustainability (F,Sp).....	3
<b>WILD 4000</b> Principles of Rangeland Management (Sp).....	3

## Elective Courses

Students should select credits approved by the Agricultural Systems Technology and Education Department for flexibility in strengthening areas of insufficient background.

A total of 60 credits is required.

## Agricultural Machinery Technology Certificate

This one-year agricultural program meets the needs of persons interested in employment opportunities with agricultural dealerships and companies in the areas of parts and service, as well as with farm suppliers, feed and fertilizer agencies, corporate farms and ranches, and other related industries. The vocationally oriented agricultural technology program includes a cooperative occupational experience placement at the end of the first year of instruction.

Requirements for the one-year program include a minimum of 31 credits, with the following breakdown of suggested coursework:

### Fall Semester

<b>ASTE 1010</b> Introduction to Agricultural Systems Technology .....	3
<b>ASTE 1120</b> Forage and Harvest Equipment.....	3
<b>ASTE 1610</b> Agricultural Machinery Engines.....	3
<b>ASTE 1615</b> Agricultural Machinery Engine Laboratory .....	3
<b>ASTE 3090</b> Computer Applications in Agriculture .....	3
<b>ASTE 3710</b> Agricultural Machinery Hydraulic Systems and Diagnosis.....	3

### Spring Semester

<b>ASTE 1130</b> Planting and Tillage Equipment.....	3
<b>ASTE 1620</b> Agricultural Machinery Power Trains.....	3
<b>ASTE 1625</b> Agricultural Machinery Power Trains Laboratory .....	3
<b>ASTE 2250</b> Occupational Experience in Agriculture .....	1-6
<b>ASTE 3080</b> Compact Power Units for Agricultural and Turfgrass Applications .....	3

See major requirement sheet, available from the department, for more information.

## Minor in Agricultural Systems Technology

A minimum of 18 credits approved by a faculty advisor are required.

## Bachelor of Science in Family and Consumer Sciences Education (FCSE)

This major provides professional preparation for teaching Family and Consumer Sciences Education and Occupational Family and Consumer Sciences Education in public schools, or for employment as a family and consumer scientist in business or government agencies, and extension. Many states, including Utah, require a master's degree to work for extension.

This composite major includes study in nutrition and food sciences, family and human development, interior design, apparel and textiles, and consumer sciences, plus professional education courses.

Student teaching in secondary public schools is required. Internships in extension or business are available.

The following courses are required for the Family and Consumer Sciences Education Major.

### Required Support Courses and Prerequisites

<b>MATH 1050 (QL)</b> College Algebra (F,Sp,Su).....	4
<b>CHEM 1110 (BPS)</b> General Chemistry I (F,Sp).....	4
<b>CHEM 1120 (BPS)</b> General Chemistry II (Sp).....	4

### Major Required Courses (90 credits)

A grade of C or better must be earned in these courses

<b>FCHD 1500 (BSS)</b> Human Development Across the Lifespan (F,Sp)...	3
<b>FCHD 2100</b> Family Resource Management (F,Sp).....	3
<b>FCHD 2400 (BSS)</b> Marriage and Family Relationships (F,Sp).....	3
<b>FCHD 2610</b> Child Guidance (F,Sp).....	3
<b>FCHD 3350 (DSS)</b> Family Finance (F,Sp,Su).....	3
<b>FCHD 4550</b> Preschool Methods and Curriculum (F,Sp).....	3
<b>FCSE 2040</b> Clothing Production Principles (F,Sp).....	3
<b>FCSE 2510</b> Orientation to Family and Consumer Sciences Education (Sp).....	3
<b>FCSE 3030 (DSC/QI)</b> Textile Science (Sp).....	4
<b>FCSE 3040</b> Advanced Clothing Production Principles (F).....	3
<b>FCSE 3080 (DHA)</b> Dress and Humanity (F,Sp).....	3
<b>FCSE 3300</b> Family and Consumer Sciences Education Clinical Experience I (40 hrs. minimum) (Sp).....	1
<b>FCSE 3400</b> Family and Consumer Sciences Education Methods I (Sp).....	3
<b>FCSE 3790</b> Housing and Interior Design Teaching Methods (F,Sp,Su).....	3
<b>FCSE 4250</b> Internship in Family and Consumer Sciences Education (F,Sp,Su).....	2
<b>FCSE 4300</b> Family and Consumer Sciences Education Clinical Experience II (40 hrs. minimum) (F).....	1
<b>FCSE 4400</b> Family and Consumer Sciences Education Methods II (F).....	3
<b>FCSE 5500</b> Student Teaching Seminar (2 weeks) (Sp).....	2
<b>FCSE 5630</b> Student Teaching in Secondary Schools (13 weeks, full-time) (Sp).....	10
<b>ID 1750 (BCA)</b> Design in Everyday Living (Su).....	3
<b>INST 3500</b> Technology Tools for Secondary Teachers (F,Sp,Su).....	1
<b>NFS 1020 (BLS)</b> Science and Application of Human Nutrition (F,Sp,Su).....	3
<b>NFS 1240</b> Culinary Basics (F,Su).....	3
<b>NFS 2020</b> Nutrition Throughout the Life Cycle (Sp).....	3
<b>NFS 3070</b> Science of Food Preparation (Sp).....	4
<b>SCED 3100</b> Motivation and Classroom Management (F,Sp).....	3
<b>SCED 3210 (DSS/CI)</b> Educational and Multicultural Foundations (F,Sp).....	3
<b>SCED 4200 (CI)</b> Reading, Writing, and Technology (F,Sp).....	3
<b>SCED 4210</b> Cognition and Evaluation of Student Learning (F,Sp).....	3
<b>SPED 4000</b> Education of Exceptional Individuals (F,Sp,Su) (May be taken anytime).....	2

# Department of Agricultural Systems Technology and Education

## Suggested Four-year Plans

Suggested semester-by-semester four-year plans for students working toward a Bachelor of Science degree in majors within the Department of Agricultural Systems Technology and Education can be found at: <http://www.usu.edu/degreeplans/>

Students should consult with their advisor to develop a plan of study tailored to their individual needs and interests.

## Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Main 15, (435) 797-2715, [honors@usu.edu](mailto:honors@usu.edu). Additional information can be found online at: <http://www.usu.edu/honors/>

## Additional Information

For further information about undergraduate programs and requirements in the Department of Agricultural Systems Technology and Education, see the major requirement sheets, which can be obtained from the department, or accessed online at: <http://www.usu.edu/majorsheets/>

## Graduate Programs

### Admission Requirements

See general admission requirements, pages 36-37. Applications will be considered throughout the year. However, students who wish to be considered for financial aid must apply by February 1 for the coming academic year. No application will be considered until all required information arrives at the office of the School of Graduate Studies.

### Course Requirements

#### Master of Science

The MS program requires the completion of a minimum of 33 credits beyond the bachelor's degree. These credits must be approved by a supervisory committee. However, to optimize a student's academic experiences, 36 credits are recommended. A 15-credit core curriculum is required and includes courses in research/statistics and completion of a Plan A thesis for 6 credits or a Plan C program with a minimum of 37 credits. Students are also expected to select and complete an area of specialization.

In the Family and Consumer Sciences Education and Extension specialization, a Plan B option is available. This plan involves 33 credits of instruction (includes 3 thesis credits) and the development and presentation of a creative project.

The following four specializations are available for the MS in Agricultural Education:

The **Agricultural Extension Education** specialization provides a program for individuals interested in cooperative extension work. The curriculum for the program includes coursework related to managing people; planning, implementing, and evaluating programs to promote technology transfer (adult education); understanding research techniques relevant to agricultural education; and the managing of fiscal affairs.

Electives are selected from each of the following departments: Agricultural Systems Technology and Education; Applied Economics; Animal, Dairy and Veterinary Sciences; Economics and Finance; Biology; Plants, Soils, and Climate; Wildland Resources; and Instructional Technology and Learning Sciences.

The **Secondary and Postsecondary Agricultural Education** specialization is designed for persons desiring to improve their competencies as educators. This specialization provides teachers with opportunities to acquire additional knowledge in professional education and in their teaching specialties. The master's degree *does not* result in a teaching license for public schools.

The purpose of the **Family and Consumer Sciences Education and Extension** specialization is to expand academic preparation in an area of study such as family studies, housing, textiles and clothing, nutrition and food sciences, and management of personal resources. This specialization places emphasis on teaching and curriculum/program development and/or Extension. Students are prepared for community professions, including secondary teaching (since students earn a teaching license), urban and rural extension, social science, and business. Study may lead to supervisory and administrative positions in business, technical schools, and applied technology colleges, or to consulting positions in mass media and industry. The master's degree *does not* result in a teaching license for public schools.

The **International Agricultural Extension** specialization was developed to prepare agriculturally educated people to perform administrative and supervisory roles in less-developed countries. The curriculum for this program includes coursework related to managing people; planning, implementing, and evaluating programs to promote technology transfer; and managing fiscal affairs. Electives are selected from each of the following departments: Agricultural Systems Technology and Education; Animal, Dairy and Veterinary Sciences; Applied Economics; Economics and Finance; Biology; Plants, Soils, and Climate; and Instructional Technology and Learning Sciences.

### Research

The Utah Agricultural Experiment Station, a component of the College of Agriculture, supports graduate work in several areas of Agricultural Systems Technology and Education. Other state and federal agencies also support research in agricultural systems.

# Department of Agricultural Systems Technology and Education

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## Financial Assistance

Both departmental and formal grant support are available to graduate students and are awarded on a competitive basis. Students requesting financial support should apply to the department.

Research assistantships are available through faculty members who have ongoing projects with the Utah Agricultural Experiment Station or who hold special research grants from the University, private companies, or state-federal agencies. Acceptance to pursue graduate study does not guarantee the student financial assistance.

## Requirement Changes

Graduation requirements described in this catalog are subject to change. Students should check with their departments concerning possible changes.

## Agricultural Systems Technology and Education Faculty

### Professors

*Bruce E. Miller*, agricultural systems and mechanization  
*Gary S. Straquadine*, agricultural education/extension

### Adjunct Professor

*Kevin C. Kesler*, 4-H and youth development programs

### Professors Emeritus

*Gilbert A. Long*, agricultural education  
*Weldon S. Sleight*, extension education

### Associate Professors

*F. Richard Beard*, research and extension, agricultural engineering  
*Rhonda L. Miller*, sustainable agriculture/agricultural systems

### Assistant Professors

*Brian K. Warnick*, agricultural education, teacher preparation  
*Lindsey Shirley*, family and consumer sciences education,  
teacher preparation

### Lecturers

*Royce Hatch*, agricultural machinery technology  
*Jennifer L. Nielson*, family and consumer sciences education,  
clothing and textiles  
*Luella Oaks*, apparel and textiles  
*Afiya Sabir*, education and outreach, Biotechnology Center  
*Eric B. Worthen*, agricultural systems  
*Julie P. Wheeler*, family and consumer sciences education

### Academic Advisors

*Luella Oaks*, Family and Consumer Sciences Education  
*Eric B. Worthen*, Agricultural Systems Technology and Education

## Course Descriptions

Agricultural Systems Technology and Education (ASTE),  
[click here](#)

Family and Consumer Sciences Education (FCSE), [click here](#)