

Department of

# Agribusiness, Plant & Animal Sciences



## Mel Dewsnap, Department Chair

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## Department Description

The Department of Agribusiness, Plant & Animal Sciences prepares students for many exciting and challenging employment specialties, and offers a wide variety of course work in agriculture.

The close relationship between teachers and students creates a learning atmosphere that encourages the development of the finest students.

Students receive excellent training from case studies and practical "hands on" experience provided by work on the University farm, Livestock Center, internships, and practicum experience. Facilities include classrooms, laboratories, greenhouses, a farm mechanics shop, and University farm and livestock facilities, used for faculty and student learning and research.

All Agribusiness, Plant & Animal Sciences majors are exposed to on-the-job training through internships. A wide variety of locations and environments are available throughout the United States and occasionally abroad. Most placements are paid positions.

The employment opportunities for students with a background in Agriculture are promising. Examples of career opportunities available in agriculture are specialists in crop consulting, plant and animal genetics, soil and water, environmental, GPS/GIS, machinery management, agronomy, farm and ranch management, finance, agricultural economics, real estate appraisal, education, food processing, animal health, marketing, food safety, range resource management, government agency workers and researchers, as well as many others.

## Department Degrees

Agribusiness, Plant & Animal Sciences majors may choose from four emphasis areas.

### Bachelor of Science – Agribusiness, Plant & Animal Sciences

#### Agribusiness Emphasis (641-99)

Agribusiness is designed to prepare a student for employment in a variety of fields, including business finance, marketing, international agriculture, agricultural marketing, policy formation, farm and ranch management, resource economics, rural development, bank, and real estate appraisal.

#### Agronomy Emphasis (641-66)

Agronomy is the study of plants (field crops) and soils and their ecological interactions with the surrounding environment. Studies include the production of food and fiber (farming) in connection with the development of science technology for the betterment of mankind. Young minds will find substance in discovering the secrets for tomorrow's food production. Graduates will be prepared to enter the workforce or continue onto graduate programs.

#### Agriculture Technology Emphasis (641-67)

Agriculture Technology is the study of technical principles and problems in agriculture industries. Agriculture is becoming more and more high tech, and the need for well prepared and knowledgeable agricultural technicians is expanding, such as GPS/GIS specialists and other specialized computer applications.

#### Animal Science Emphasis (641-100)

Animal Science is designed for students who desire to work in animal production agriculture or associated animal agribusiness. Students in this emphasis will be taught animal anatomy and physiology, nutrition, reproduction, health, genetics, meat science, grazing, and the fundamentals of running an animal-based production business. Graduates will be prepared to enter the workforce or continue in graduate programs.

### Bachelor of Science – Major in Agriculture Education Composite (825)

Agricultural Education will prepare students for employment opportunities in teaching agriculture, as well as agribusiness occupations. Highly qualified teachers are in short supply nationwide. Graduates will be prepared to enter the work force or continue onto graduate school.

### Associate Degree in Agriculture Management (344)

The A.A.S. Degree in Agriculture Management is offered for the student who plans to enter the work force immediately following the completion of their degree.

### Associate Degree in Beef Production Management (347)

The A.A.S. Degree in Beef Production Management prepares students to apply practical skill sets. Skills in animal health, nutrition, reproduction, and meat sciences are taught. This degree is offered for the student who plans to enter the work force immediately following the completion of their degree.

### Minor in Agriculture Business, Science & Technology (102)

The Agriculture Business, Science & Technology minor is for those students NOT majoring in Agribusiness, Plant and Animal Sciences.

### Minor in Animal Science (140)

The Animal Science minor is for those students NOT majoring in Agribusiness, Plant & Animal Sciences.

### AAS in Agricultural Management (344)

Take Required Foundation Courses

Major Requirements

*No Double Counting of Major Courses - No Grade Less Than C- in Major Courses*

<i>Take these courses:</i>	<i>Take 28 credits:</i>	<i>Cont. from previous column</i>	<i>Program Notes:</i>
AGBUS 100 1	AGRON 122 3	AGTEC 122 2	
AGBUS 180 4	AGRON 270 3	AGTEC 124 2	
AGBUS 238 3	AGRON 297 2	AGTEC 294 2	
AGBUS 398 1	AGRON 310 3	AGTEC 320 3	
AGBUS 450 3	AGRON 321 3	AGTEC 335 4	
AGRON 220 3	AGRON 325 3	AGTEC 360 4	
AGRON 220L 1	AGRON 330 3	AGTEC 474 3	
AGTEC 220 3	AGRON 420 4	AGTEC 486 3	
AGTEC 280 3	AGRON 425 3	ME 105 4	
22	AGRON 435 3	28	
	AGRON 440 3		
	AGRON 455 3		
	<i>Cont. next column</i>		

**Total Major Credits=50**

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

### AAS in Beef Production Management (347)

Take Required Foundation Courses

Major Requirements

*No Double Counting of Major Courses - No Grade Less Than C- in Major Courses*

<i>Take these courses:</i>	<i>Cont. from previous column</i>	<i>Take 3 credits:</i>	<i>Program Notes:</i>
AGBUS 100 1	AS 355 4	AGBUS 347 3	
AGBUS 180 4	AS 360 4	AGBUS 450 3	
AGBUS 398 1	BIO 225 3	AGRON 220 3	
AGRON 330 3	ECON 111 3	AGRON 220L 1	
AGTEC 220 3	47	AS 247 2	
AS 150 3		AS 320 3	
AS 215 4		AS 340 3	
AS 220 3		AS 350 4	
AS 315 3		AS 430 4	
AS 330 2		BIO 325 3	
AS 333 3		3	
AS 336 3		3	
<i>Cont. next column</i>			

**Total Major Credits=50**

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES







### Minor in Agricultural Business, Science & Technology (102)

#### Minor Requirements

*No Grade Less Than C- for Minor Courses*

<i>Take these courses</i>		<i>Take 13 credits:</i>		<i>Program Notes:</i>
AGBUS 100	1	AGBUS 210	3	
AGBUS 180	4	AGBUS 347	3	
AGRON 220	3	AGRON 122	3	
AGRON 220L	1	AGRON 310	3	
AGTEC 220	<u>3</u>	AGRON 321	3	
	12	AGRON 330	3	
		AGRON 425	3	
		AGRON 435	3	
		AGRON 440	3	
		AGTEC 335	4	
		AGTEC 360	<u>4</u>	
			13	

**Total Minor Credits=25**

This minor is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

### Minor in Animal Science (140)

#### Minor Requirements

*No Grade Less Than C- for Minor Courses*

<i>Take these courses</i>		<i>Take 6 credits:</i>		<i>Program Notes:</i>
AS 150	3	AS 215	4	
AS 220	3	AS 247	2	
AS 315	3	AS 248	2	
AS 336	3	AS 320	3	
AS 355	4	AS 330	2	
BIO 225	<u>3</u>	AS 333	3	
	19	AS 340	3	
		AS 347	2	
		AS 350	3	
		AS 360	3	
		AS 430	4	
		AS 490	1-3	
		BIO 325	<u>3</u>	
			6	

**Total Minor Credits=25**

This minor is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

Agribusiness, Plant & Animal Science Pre-approved Clusters

Agribusiness Cluster		
<i>Take these courses:</i>		
AGBUS 210	Agriculture Economics	3
AGBUS 347	Agricultural Marketing	3
AGBUS 450	Agribusiness Management	3
<i>Select 2 classes from the following:</i>		
AGBUS 410	Agriculture Policy & Trade	3
AGBUS 420	Agribusiness Operations Management	3
AGBUS 430	Agriculture Price Analysis	3
AGBUS 435	Agriculture Commodity Marketing	3
<b>Total Credits</b>		<b>15</b>

Equine Cluster		
<i>Take these courses:</i>		
AS 220	Feeds and Nutrition	4
AS 340	Horse Production	3
AS 435	Equine Nutrition	3
<i>Select 2-4 credits from the following:</i>		
AS 247	Animal Handling	2
AS 347	Advanced Animal Handling	2
<b>Total Credits</b>		<b>12</b>

Animal Health		
<i>Take these courses:</i>		
AS 215	Anatomy/Physiology	4
AS 315	Animal Health	3
BIO 221	Microbiology	3
BIO 222	Microbiology Lab	1
<i>Take one course:</i>		
AS 340	Horse Production	3
AS 350	Small Animal Production	4
AS 360	Beef Production	4
AS 370	Dairy Production	3
<b>Total Credits</b>		<b>14</b>

Animal Reproduction Cluster		
<i>Take these courses:</i>		
AS 330	Artificial Insemination	2
AS 336	Animal Reproduction	3
AS 430	Applied Reproduction	4
<i>Take one course:</i>		
AS 333	Livestock Genetics	3
Bio 375	Genetics and Molecular Biology	3
<i>Take one course:</i>		
AS 340	Horse Production	3
AS 350	Small Animal Production	4
AS 360	Beef Production	4
<b>Total Credits</b>		<b>15</b>

Natural Resources		
<i>Take these courses:</i>		
BIO 225	Range Ecology I	3
BIO 302	Ecology	4
BIO 325	Range Ecology II	3
BIO 455	Rangeland Inventory & Analysis Lab	3
BIO 466	Rangeland Vegetation Manipulation & Improvement	3
<b>Total Credits</b>		<b>16</b>

Soil Management		
<i>Take these courses:</i>		
AGRON 220	Introduction to Soils	3
AGRON 321	Soils Fertility and Plant Nutrition	3
AGRON 325	Irrigation and Drainage	3
AGRON 425	Soil Management	3
<b>Total Credits</b>		<b>12</b>

Crop Production		
<i>Take these courses:</i>		
AGRON 310	Tree, Fruit and Vegetable Management	3
AGRON 330	Forage Crops	3
AGRON 435	Potato Science	3
AGRON 455	Cereal Science	3
<b>Total Credits</b>		<b>12</b>

Crop Protection		
<i>Take these courses:</i>		
AGRON 420	Crop Protection	4
AGRON 321	Soil Fertility and Plant Nutrition	3
AGRON 325	Irrigation and Drainage	3
AGRON 445	Crop Advisor Certification	2
<b>Total Credits</b>		<b>12</b>

GIS in Agriculture and Natural Resources		
<i>Take these courses:</i>		
AGTEC 286	Introduction to Precision Agriculture	3
AGTEC 486	Applied GIS in Agriculture and Natural Resources	3
AGTEC 474	Agricultural Machinery Systems Analysis	3
<i>Take one course:</i>		
CIT 320	Database Design and Development	3
GEOG 240	Maps and Remote Sensing	3
GEOG 340	Advanced GIS and Spatial Analysis	3
<b>Total Credits</b>		<b>12</b>

Agriculture Technology		
<i>Take these courses:</i>		
AGTEC 122	Small Engines	2
AGTEC 335	Electronic Systems Diagnostics and Repairs	4
AGTEC 360	Hydraulic Systems Diagnostics and Repairs	4
AGTEC 320	Agricultural Machinery	3
AGTEC 474	Agricultural Machinery Systems Analysis	3
<b>Total Credits</b>		<b>16</b>

Animal Production		
<i>Take these courses:</i>		
AS 150	Introduction to Livestock	3
AS 220	Feeds and Nutrition	3
AS 215	Anatomy & Physiology	4
<i>Take one course:</i>		
AS 340	Horse Production	3
AS 350	Small Animal Production	4
AS 360	Beef Production	4
AS 370	Dairy Production	3
<b>Total Credits</b>		<b>13</b>

Animal Nutrition		
<i>Take these courses:</i>		
AS 220	Feeds and Nutrition	3
AS 425	Ruminant Nutrition	4
Chem 106	General Chemistry	4
<i>Take one course:</i>		
AS 320	Feedlot Management	3
AS 435	Equine Nutrition	4
<b>Total Credits</b>		<b>14</b>

Beef Production		
<i>Take these courses:</i>		
AS 220	Feeds and Nutrition	3
AS 360	Beef Production	4
<i>Take 5 - 7 credits:</i>		
AGBUS 450	Agribusiness Management	3
AS 330	Artificial Insemination	2
AS 333	Livestock Genetics	3
AS 336	Animal Reproduction	4
AS 355	Meats	4
AS 425	Ruminant Nutrition	4
AS 430	Applied Reproduction	4
<b>Total Credits</b>		<b>12</b>

# Agribusiness, Plant and Animal Sciences

Brigham Young University–Idaho 2008-2009

## Course Descriptions

## Credits\*

<b>AGBUS 100 Agriculture Orientation</b>	<b>(1:1:0)</b>
Fee: \$25.00 An orientation to successful business and living practices, and a survey of occupational opportunities in the Agriculture field. (Fall, Winter)	
<b>AGBUS 180 Ag Accounting and Computer Applications</b>	<b>(4:3:3)</b>
The student will gain experience using spreadsheet, database, accounting and word processing programs by applying their features to solving farm management problems. This course is designed for the student to learn certain accounting principles through use of the microcomputer. (Fall, Winter, Spring)	
<b>AGBUS 200 Agricultural Spanish</b>	<b>(3:3:0)</b>
This course has been designed to provide students with the ability to communicate with Spanish speakers on a basic level, with emphasis on farm and ag-related issues. No previous Spanish experience is required. (Fall)	
<b>AGBUS 210 Agricultural Economics</b>	<b>(3:3:0)</b>
Prerequisite: Sophomore standing and math background. A systematic introduction to basic economic concepts and issues as they relate to the agribusiness sector in the U.S. economy. (Winter)	
<b>AGBUS 232 Agricultural Sales and Merchandising</b>	<b>(3:2:2)</b>
The retail sales and merchandising of agricultural products. (Fills human relations requirement for Landscape Horticulture Management and Floral Design Majors.) (Fall)	
<b>AGBUS 238 Agribusiness Leadership</b>	<b>(3:3:0)</b>
Provides opportunities to develop leadership and increase occupational competency. (Fall, Winter)	
<b>AGBUS 347 Agricultural Marketing</b>	<b>(3:3:1)</b>
Fee: \$10.00 Fundamental marketing principles applied to agricultural marketing. (Fall)	
<b>AGBUS 398 Occupational Internship</b>	<b>(1:0:0)</b>
Prerequisite: Consent of instructor Internships provide actual work experience that will add to or enhance the career preparation and learning of individual students. The ideal internships would take place during a student's off-track semester and requires a minimum of 7 weeks of quality full time work experience. Internships must be approved by department internship coordinators. (Fall, Winter, Spring)	
<b>AGBUS 410 Agricultural Policy and Trade</b>	<b>(3:3:0)</b>
Prerequisite: Junior standing or consent of instructor. An advanced course in the study of policy formulation, government actions, societal and environmental issues, and programs that influence the agricultural sectors of production, marketing, and finances. (Winter)	
<b>AGBUS 420 Agribusiness Operations Analysis</b>	<b>(3:3:2)</b>
Fee: \$20.00 Prerequisite: Senior standing, a statistics course, or consent of instructor. Principles and procedures in the analysis and research of agricultural business operations. (Fall)	
<b>AGBUS 430 Agricultural Price Analysis</b>	<b>(3:3:2)</b>
Prerequisite: Senior standing, a statistics course, or consent of instructor. Application of statistical tools for price analysis. Emphasis on price making process for specific agricultural commodities. (Fall)	

<b>AGBUS 435 Agriculture Commodity Marketing</b>	<b>(3:3:1)</b>
Prerequisite: AgBus 210, AgBus 347, Ag Bus 430, Math 221, Senior standing or consent of instructor. An advanced agricultural marketing course intended to provide students with an understanding of the structure and operation of agriculture commodity markets and their critical role in the agribusiness sector as well as the overall economy. (Fall, Winter)	
<b>AGBUS 440 Agribusiness Finance</b>	<b>(3:3:0)</b>
Prerequisite: AgBus 180, AgBus 210, Math 221, Jr. Standing. Theory of financial decision making as applied to farms and firms related to agriculture. Topics include asset pricing models, financial markets, capital structure, and farmland control, term structure of interest rates, risk management and credit evaluation. An advanced agribusiness course intended to provide students with an understanding of the structure and operation of agriculture finance. (Fall, Winter)	
<b>AGBUS 450 Agriculture Business Management</b>	<b>(3:3:1)</b>
Application of approved practices, concepts, principles and tools of management in an agricultural business. (Fall, Winter, Spring)	
<b>AGBUS 498 Occupational Internship II</b>	<b>(1:0:0)</b>
Prerequisite: Consent of instructor. Internships provide actual work experience that will add to or enhance the career preparation and learning of individual students. The ideal internships would take place during a student's off-track semester and requires a minimum of 7 weeks of quality full time work experience. Internships must be approved by department internship coordinators. (Fall, Winter, Spring)	
<b>AGED 297 Ag Education Practicum</b>	<b>(2:1:2)</b>
The purpose of this course is to allow those students interested in teaching high school agriculture to gain an early field experience. Students will be required to spend at least 40 hours in the semester observing and participating in lecture and laboratory activities. (Fall)	
<b>AGED 380 Connecting Education &amp; Employment</b>	<b>(3:3:0)</b>
Prepares future Agricultural educators to teach school and career options to secondary students who desire a career in agriculture or related field of endeavor. (Winter)	
<b>AGED 450 Curriculum Development/Assessment in Occupational Education</b>	<b>(2:2:0)</b>
This course will help students develop and understanding of the basic techniques of identifying and selecting instructional materials and methods to effectively teach agriculture at the secondary level. This course mainly focuses on course construction in professional-technical curriculum development in agriculture and its related fields. (Fall)	
<b>AGED 452 Methods of Teaching Agriculture</b>	<b>(3:3:0)</b>
Competence in teaching methods, along with competence in the technical subject matter is essential to be effective as a teacher of agriculture. (Fall)	
<b>AGED 460 Experiential Laboratory Methods</b>	<b>(2:1:2)</b>
This course is to help students develop specific skill sets in agriultral curriculum laboratory exercises. The course will focus on the experiential method of teaching and developing skills that can be transferred to secondary students relative to agricultural course work. (Fall)	
<b>AGRON 115 Feeding the World</b>	<b>(3:3:0)</b>
Insight into world populations, world food production, and an understanding of the need to educate those throughout the world, so that they might have the opportunity to become self-sufficient.	
<b>AGRON 122 Introduction to Plant Science</b>	<b>(3:3:0)</b>
The basic principles of structure, form, and function of plants in both the higher and lower plant kingdoms. (Fall, Winter, Spring)	

<p><b>AGRON 220 Introduction to Soils</b> (3:3:0) A basic course dealing with the formation of soils as well as the physical, chemical and biological properties of soils. (Fall, Winter, Spring)</p>	<p><b>AGRON 445 Crop Advisor Certification</b> (2:2:0) The international Certified Crop Advisor program is designed to provide qualified credentials to professionals in Agriculture who consult and make nutrient and pesticide recommendations to Grower/Producers. Completion of the course prepares students to take two required examinations for CCA certification. (Fall, Spring)</p>
<p><b>AGRON 220L Introduction to Soils Lab</b> (1:0:2) Hands on experience determining soil texture, structure, color, measuring soil pH, nitrates, and fertilizers. (Fall, Winter, Spring)</p>	<p><b>AGRON 455 Cereal Crops</b> (3:3:0) Fee: \$15.00 Crops history and biology of major cereal crops. Class will cover both warm and cool season cereal crops. Introduction of principles involved in cereal chemistry, development and processing. (Fall, Winter)</p>
<p><b>AGRON 270 Agro Ecology</b> (3:2:2) Travel Fee: \$15.00 This course is to help students become aware of environmental issues around the world. These issues will be addressed multidimensionally. We will want a holistic approach, "How does man interact with these issues?" (Fall, Winter, Spring)</p>	<p><b>AGTEC 122 Small Engines</b> (2:1:3) Fee: \$10.00 Selection, adjustment, and care of small engines. Small engine theory and procedures for complete small engine overhaul. (Fall, Winter, Spring)</p>
<p><b>AGRON 297 Agricultural Practicum</b> (2:0:0) Development and improvement of selected occupational competencies. (Fall, Winter)</p>	<p><b>AGTEC 124 Compact Equipment</b> (2:1:3) Fee: \$10.00 Test and repair procedures for engines, electrical, power trains and hydraulics found on compact equipment. (Fall, Winter, Spring)</p>
<p><b>AGRON 300 Agricultural Seminar</b> (1:1:0) Fee: \$25.00 This class will help ensure students they are on track for graduation with a review of student grad reports and internship experiences. (Fall, Winter)</p>	<p><b>AGTEC 125 Agriculture Maintenance Welding</b> (3:2:2) Fee: \$20.00 An overview in the use of electric arc and oxy acetylene welding equipment with an emphasis upon maintenance welding as it pertains to farm and ranch applications.</p>
<p><b>AGRON 310 Tree Fruit and Vegetable Management</b> (3:3:2) Shows the importance of fruit and vegetable crops in U.S. agriculture, and their contribution to the national economy and the human diet. (Fall)</p>	<p><b>AGTEC 132 Climate Control</b> (2:2:2) System theory, diagnosis, and repair of agricultural systems. (Fall, Winter)</p>
<p><b>AGRON 321 Soil Fertility and Plant Nutrition</b> (3:2:2) Field identification and measurement of plant nutrient deficiencies, petiole analysis and crop fertilization methods. (Fall)</p>	<p><b>AGTEC 220 Preventive Maintenance &amp; Machinery Management</b> (3:2:4) Fee: \$10.00 An overview of preventive maintenance and care of equipment. (Fall, Winter, Spring)</p>
<p><b>AGRON 325 Irrigation and Drainage</b> (3:3:2) Fee: \$15.00 Principles and application of soil, water and plant relations, agricultural meteorology, and irrigation. (Fall)</p>	<p><b>AGTEC 230 Agriculture Electrification - AC</b> (2:1:3) Principles, systems and applications of electrical energy in agriculture. (Winter)</p>
<p><b>AGRON 330 Forage Crops</b> (3:3:0) Fee: \$15.00 A composite study of an important field of agronomy, forage crops used in the livestock industry. Applied production principles and management requirements will be emphasized for each crop. History and biology of major crops. (Fall, Winter)</p>	<p><b>AGTEC 286 Introduction to Geographical Information Systems in Agriculture and Natural Resources</b> (3:2:2) This course is designed to teach the basic of geographical information systems in agriculture and natural resources and how global positioning systems and geographical information systems can be used to improve agricultural and natural resource management. (Fall, Winter)</p>
<p><b>AGRON 420 Crop Protection &amp; Pesticide Licensing</b> (4:3:2) This course will examine crop protection through the use of pesticides, cultural and biological control methods. (Fall, Spring)</p>	<p><b>AGTEC 290 Individual Study</b> (2:0:0) Independent study, special assignment and/or advanced inquiry in an area of special interest, approved after consultation with instructor in charge. (Fall, Winter, Spring)</p>
<p><b>AGRON 425 Soil Management</b> (3:3:1) Prerequisite: Agron 220 &amp; 220L; Chem 101 or higher; Math 108 or higher. The science and application of crops science and physiology. This class will apply cellular and biochemical analysis of plant physiology to the more applied aspects of plant growth specifically agricultural crops. (Fall, Winter)</p>	<p><b>AGTEC 320 Agricultural Machinery</b> (3:2:2) Fee: \$10.00 Selection, servicing, maintenance, operation, testing, repair, use and general management of agricultural equipment. (Winter)</p>
<p><b>AGRON 435 Potato Science</b> (3:3:2) Fee: \$15.00 Basic understanding and practical application of potato production. Become more knowledgeable of potato management. (Winter)</p>	<p><b>AGTEC 335 Electronic Systems Diagnostic and Repair</b> (4:4:2) Basic electricity in farm power electrical circuits, with emphasis in starting systems, charging systems, lighting systems and accessory systems. Advanced electronics used in farm power: fuel injection systems, monitors and controllers. (Fall)</p>
<p><b>AGRON 440 Crop Physiology</b> (3:3:1) Prerequisite: Agron 122 or Bio 100; Chem 101 or higher; Math 108 or higher. The science and application of crop science and physiology. This class will apply cellular and biochemical analysis of plant physiology to the more applied aspects of plant growth specifically agricultural crops. (Fall, Spring)</p>	<p><b>AGTEC 360 Agricultural Hydraulics</b> (4:4:2) A study of the fundamental and advanced principles governing and regulating the transmission and control of fluid power hydraulics. Trouble shooting and system repairs. (Winter)</p>

<p><b>AGTEC 465 Machinery Management</b> (3:3:1)                      A study of machinery efficiency, matching machines, and horsepower. Analyzing and estimating costs associated with keeping machines running.                      (Fall)</p>	<p><b>AS 248 Draft Horses</b> (2:2:4)                      Fee: \$100.00                      This course is to prepare students to safely hitch and drive a variety of horse drawn vehicles with draft animals for work or recreational purposes.                      (This course will not be offered)</p>
<p><b>AGTEC 474 Mechanical Systems Analysis</b> (3:3:2)                      Testing and diagnosis for various pieces of equipment related to agriculture systems pertaining to the production of food.                      (Fall)</p>	<p><b>AS 315 Animal Health</b> (3:2:3)                      Fee: \$10.00                      Instruction in the areas of animal health evaluation, livestock disease prevention and treatment; leading to the development of the basic skills required to evaluate animal health status and programs.                      (Fall, Winter)</p>
<p><b>AGTEC 486 Advanced GIS in Agriculture and Natural Resources</b> (3:2:2)                      This course is designed to apply geographical information systems (GIS) to agriculture and natural resource disciplines. The course will focus on collecting, analyzing, interpolating, and decision making using GIS software and GPS equipment.                      (Fall, Spring)</p>	<p><b>AS 320 Feedlot Management</b> (3:3:0)                      Fee: \$20.00                      Prerequisite: AS 220                      Designed for students interested in pursuing a career in beef feed-lot management or other related agribusiness areas.                      (Fall or Winter)</p>
<p><b>AS 145 Trailriding</b> (1:0:2)                      Fee: \$100.00                      Prerequisite: AS 140 or an equivalent amount of riding experience/consent of instructor                      This course is designed to help those who have had some experience riding horses expand on those experiences by learning first hand appropriate trail etiquette, proper trailer techniques, appropriate tack, and how to enjoy many of the beautiful sights and sounds of Southeastern Idaho from the back of your favorite horse.                      (Fall, Spring)</p>	<p><b>AS 330 Artificial Insemination</b> (2:1:2)                      Fee: \$10.00                      Prerequisite: Recommend AS 215 or AS 336                      Development of manual skills required for cattle insemination using frozen semen. Subject matter includes principles related to selection criteria for sires, semen storage, estrus detection and synchronization. Class time is combined with practice time using live cattle.                      (Fall, Spring)</p>
<p><b>AS 150 Introduction to Livestock Production</b> (3:3:0)                      Overview of various livestock enterprises, including beef, dairy, sheep, swine and horse industries. Basic principles used in the various industries are presented. Emphasis given to current and future trends in animal science                      (Fall, Spring)</p>	<p><b>AS 333 Livestock Genetics</b> (3:3:0)                      Prerequisite: AS 150                      Study of animal breeding principles involved in improving livestock through genetic selection methods. Exploration of genetic theories and mating systems currently used in animal agriculture.                      (Fall, Spring)</p>
<p><b>AS 165 Live Animal and Carcass Evaluation</b> (2:1:2)                      Judging, grading, and methods of selection of market animals and carcasses. This course will provide students with guidelines for evaluation and selection procedures as applied to breeding, feeder and market swine, beef cattle and sheep. Will also provide principles for livestock and meat judging.                      (Fall, Spring)</p>	<p><b>AS 336 Animal Reproduction</b> (3:3:2)                      Study of reproduction of cattle, sheep, horses, and pigs. Instruction in basic reproductive anatomy, and the processes involved in prenatal development, puberty, conception and parturition. Application of reproductive principles as used in estrus synchronization, insemination, ultrasonography and embryo transfer.                      (Fall, Winter)</p>
<p><b>AS 215 Anatomy &amp; Physiology</b> (4:3:2)                      Fee: \$20.00                      A systems approach to the study of animal anatomy and physiology. Includes structure and function of the cl, skeletal, muscular, nervous, digestive and reproductive systems. Practical applications of anatomy and physiology and their relation to diseases and disorders.                      (Fall, Winter)</p>	<p><b>AS 340 Horse Production</b> (3:3:2)                      Production practices in the selection, care and evaluation of horses. Designed to provide students with better understanding of the modern equine industry. Students will learn principles of horse health, breeds of horses, their characteristics, and their uses, as well as equine behavior, anatomy and physiology, nutrition and reproduction                      (Winter, Spring)</p>
<p><b>AS 220 Feeds &amp; Nutrition</b> (3:3:0)                      Prerequisite: Math 110 &amp; Chem 105                      The study of the principles of animal nutrition as applied to nutrient digestion and metabolism, feedstuff characteristics, and principles for formulating nutritionally balanced diets.                      (Fall, Spring)</p>	<p><b>AS 347 Advanced Animal Handling &amp; Behavior</b> (2:1:3)                      Fee: \$100.00                      Prerequisite: AS 247                      Focus on the principles of pressure and release, willing communication, and on the relationship that we have with the horse. a study of the relationship that humans have had and now have with the horse, and with horse behavior patterns. Identify the root of horse behavior problems, and how to fix them.                      (Fall, Winter, Spring)</p>
<p><b>AS 225 Range Ecology I</b> (3:3:0)                      Fee: \$10.00                      Introductory study of the management of dynamic systems including the study of both large and small living organisms and their impact on ecological processes. This course is designed to teach students basic understanding of systems thinking, problem solving and the four processes making up an ecosystem including: water cycling, mineral cycling, energy flow and biotic state. Students will investigate the unique relationship of large and small living organism impact on these processes in creating a healthy, sustainable ecosystem. Undergraduates will discover the different tools used to enhance these processes for long term economic return.                      (Fall, Spring)</p>	<p><b>AS 350 Small Animal Production</b> (4:3:2)                      Fee: \$10.00                      Prerequisite: AS 150 &amp; AS 220                      An in-depth study of how to make money with swine, sheep and goats, and poultry. Learn how to transform the investment of dollars and time into a profitable and rewarding farm enterprise.                      (Fall 2008, Winter 2009)</p>
<p><b>AS 247 Animal Handling and Behavior</b> (2:1:3)                      Fee: \$100.00                      Application of low stress animal handling with sheep, cattle and horses                      (Fall, Winter, Spring)</p>	

**AS 355 Meats**

**(4:3:3)**

Fee: 25.00

Prerequisite: AS 215

The meat business, and what it takes to slaughter, process, and produce wholesome meat to sell to the consumer. USDA meat inspection will be introduced. Live evaluations through processing of beef, hog and lamb carcasses. Slaughter, cutting, curing, smoking and cooking of meat.

(Fall, Winter)

**AS 360 Beef Production**

**(4:3:2)**

Fee: \$10.00

Prerequisite: AS 150, AS 220, AS 336

Applied techniques and principles of beef production and management. Lectures will be designed to help students better understand the demands, trends and management tools of the beef industry and they will receive hands on training concerning health care, reproduction, nutrition, cattle selection, breeds, best management practices and economical tools used in management decisions.

(Fall 2008, Winter 2009)

**AS 370 Dairy Production**

**(3:2:2)**

Prerequisite: AS 150, AS 220, or consent of instructor.

The study of dairy cattle husbandry practices, lactation, health, milk production and marketing.

(Fall, Winter)

**AS 425 Advanced Nutrition**

**(4:3:2)**

Fee: \$5.00

Prerequisite: AS 220

Provide instruction in the area of advanced animal nutrition with an emphasis on nutrient digestion mechanics, absorption and cellular metabolism.

(Fall 2008, Winter 2009)

**AS 430 Advanced Reproduction**

**(4:3:3)**

Fee: \$20.00

Prerequisite: AS 215, AS 336, AS 330 or proficiency in artificial insemination, consent of instructor.

Development of skills involved in livestock reproduction technologies such as estrus synchronization, pregnancy detection, ultrasonography and embryo transfer. Cattle are the focus species.

(Fall, Winter, Spring)

**AS 435 Equine Nutrition**

**(4:3:2)**

Prerequisite: AS 220

A study of the various factors influencing equine nutrient requirement for maintenance, growth, reproduction, lactation and work. Feeding practices, determination of appropriate feedstuffs and economical feeding principles will be applied.

(Fall 2008)

**AS 490 Individual Studies**

**(1-3:0:0)**

Independent study, special assignment and/or advanced inquiry in an area of special interest; approved after consultation with instructor in charge (Upon request).

(Fall, Winter, Spring)