

Department of

Agribusiness, Plant & Animal Sciences



Mel Dewsnup, Department Chair

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Renae Zollinger, Secretary Ag Engineering Building (208) 496-2824

Alvin Lusk, Ag Resource Manager

<http://www.byui.edu/AgBusPlandAnSc/>

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.

Animal and Veterinary Science Emphasis (641-107)

Bio-veterinary science is designed to prepare the student to enter Veterinary School or other related Animal Health graduate course work. It will give the student the background to apply and be successful in veterinary school. There are exciting careers in veterinary practice, industry and research as well as government opportunities. It is a very rapidly growing industry and profession.

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 320 3	
AGBUS 398 1	AGRON 310 3	AGTEC 335 4	
AGBUS 450 3	AGRON 321 3	AGTEC 360 4	
AGRON 220 3	AGRON 325 3	AGTEC 474 3	
AGRON 220L 1	AGRON 330 3	AGTEC 486 3	
AGTEC 220 3	AGRON 420 4	ME 105 4	
AGTEC 286 3	AGRON 425 3	<u>4</u>	
<u>22</u>	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 <u>3</u>	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 <u>3</u>	
AS 333 3		3	
AS 336 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

**BS in Agribusiness, Plant & Animal Sciences
Agribusiness Emphasis (641-99)**

Take Required Foundation Courses

Major Requirements

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

<p><i>Take these courses:</i></p> <table> <tr><td>AGBUS 100</td><td>1</td></tr> <tr><td>AGBUS 180</td><td>4</td></tr> <tr><td>AGBUS 238</td><td>3</td></tr> <tr><td>AGBUS 398</td><td>1</td></tr> <tr><td>AGRON 300</td><td>1</td></tr> <tr><td>AS 150</td><td><u>3</u></td></tr> <tr><td></td><td>13</td></tr> </table> <p><i>Take 1 course:</i></p> <table> <tr><td>AGRON 122</td><td>3</td></tr> <tr><td>AGRON 220</td><td><u>3</u></td></tr> <tr><td></td><td>3</td></tr> </table>	AGBUS 100	1	AGBUS 180	4	AGBUS 238	3	AGBUS 398	1	AGRON 300	1	AS 150	<u>3</u>		13	AGRON 122	3	AGRON 220	<u>3</u>		3	<p><i>Take 1 course:</i></p> <table> <tr><td>AGTEC 220</td><td>3</td></tr> <tr><td>AGTEC 335</td><td>4</td></tr> <tr><td>AGTEC 360</td><td><u>4</u></td></tr> <tr><td></td><td>3</td></tr> </table>	AGTEC 220	3	AGTEC 335	4	AGTEC 360	<u>4</u>		3	<p><i>Take these courses:</i></p> <table> <tr><td>AGBUS 210</td><td>3</td></tr> <tr><td>AGBUS 232</td><td>3</td></tr> <tr><td>AGBUS 347</td><td>3</td></tr> <tr><td>AGBUS 410</td><td>3</td></tr> <tr><td>AGBUS 420</td><td>3</td></tr> <tr><td>AGBUS 430</td><td>3</td></tr> <tr><td>AGBUS 435</td><td>3</td></tr> <tr><td>AGBUS 440</td><td>3</td></tr> <tr><td>AGBUS 450</td><td>3</td></tr> <tr><td>B 275</td><td>3</td></tr> <tr><td>B 301</td><td>3</td></tr> <tr><td>ECON 111</td><td><u>3</u></td></tr> <tr><td></td><td>36</td></tr> </table>	AGBUS 210	3	AGBUS 232	3	AGBUS 347	3	AGBUS 410	3	AGBUS 420	3	AGBUS 430	3	AGBUS 435	3	AGBUS 440	3	AGBUS 450	3	B 275	3	B 301	3	ECON 111	<u>3</u>		36	<p><i>Program Notes:</i> Select and complete one cluster from the following pre-approved clusters: <i>Agronomy</i> <i>Ag Technology</i> <i>Animal Science</i> and select and complete a 12-credit complimentary cluster approved by your faculty advisor.:</p>
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Total Major Credits=55

This major also requires a minor or 2 clusters

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

**BS in Agribusiness, Plant & Animal Sciences
Animal Science Emphasis (641-100)**

Take Required Foundation Courses

Major Requirements

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

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Total Major Credits=67

This major also requires a minor or 2 clusters

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 320	3	
AS 336	3	AS 330	2	
AS 355	4	AS 333	3	
BIO 225	<u>3</u>	AS 340	3	
	19	AS 347	2	
		AS 350	4	
		AS 360	4	
		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 and Animal Sciences

Brigham Young University-Idaho 2009-2010

Agribusiness, Plant & Animal Science Pre-approved Clusters

Agribusiness Cluster

Take these courses:

AGBUS 210	Agriculture Economics	3
AGBUS 347	Agricultural Marketing	3
AGBUS 450	Agribusiness Management	3

Select 2 classes from the following:

AGBUS 410	Agriculture Policy & Trade	3
AGBUS 420	Agribusiness Operations Management	3
AGBUS 430	Agriculture Price Analysis	3
AGBUS 435	Agriculture Commodity Marketing	3
Total Credits		15

Equine Cluster

Take these courses:

AS 220	Feeds and Nutrition	3
AS 340	Horse Production	3
AS 435	Equine Nutrition	4

Select 2-4 credits from the following:

AS 247	Animal Handling	2
AS 347	Advanced Animal Handling	2
Total Credits		12

Animal Health

Take these courses:

AS 215	Anatomy/Physiology	4
AS 315	Animal Health	3
BIO 221	Microbiology	3
BIO 222	Microbiology Lab	1

Take one course:

AS 340	Horse Production	3
AS 350	Small Animal Production	4
AS 360	Beef Production	4
AS 370	Dairy Production	3
Total Credits		14

Animal Reproduction Cluster

Take these courses:

AS 330	Artificial Insemination	2
AS 336	Animal Reproduction	3
AS 430	Applied Reproduction	4

Take one course:

AS 333	Livestock Genetics	3
Bio 375	Genetics and Molecular Biology	3

Take one course:

AS 340	Horse Production	3
AS 350	Small Animal Production	4
AS 360	Beef Production	4
Total Credits		15

Natural Resources

Take these courses:

BIO 225	Range Ecology I	3
BIO 302	Ecology	4
BIO 325	Range Ecology Systems Management	3
BIO 455	Rangeland Inventory & Analysis Lab	3
BIO 466	Rangeland Vegetation Manipulation & Improvement	3
Total Credits		16

Soil Management

Take these courses:

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
Total Credits		12

Crop Production

Take these courses:

AGRON 310	Tree, Fruit and Vegetable Management	3
AGRON 330	Forage Crops	3
AGRON 435	Potato Science	3
AGRON 455	Cereal Science	3
Total Credits		12

Crop Protection

Take these courses:

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
Total Credits		12

GIS in Agriculture and Natural Resources

Take these courses:

AGTEC 286	Introduction to GIS	3
AGTEC 486	Advanced GIS in Agriculture and Natural Resources	3
AGTEC 474	Mechanical Systems Analysis	3

Take one course:

CIT 320	Database Design and Development	3
GEOG 240	Maps and Remote Sensing	3
GEOG 340	Advanced GIS and Spatial Analysis	3
Total Credits		12

Agriculture Technology

Take these courses:

AGTEC 122	Small Engines	2
AGTEC 335	Electronic Systems Diagnostics and Repairs	4
AGTEC 360	Agricultural Hydraulics	4
AGTEC 320	Agricultural Machinery	3
AGTEC 474	Mechanical Systems Analysis	3
Total Credits		16

Animal Production

Take these courses:

AS 150	Introduction to Livestock	3
AS 220	Feeds and Nutrition	3
AS 215	Anatomy & Physiology	4

Take one course:

AS 340	Horse Production	3
AS 350	Small Animal Production	4
AS 360	Beef Production	4
AS 370	Dairy Production	3
Total Credits		13

Animal Nutrition

Take these courses:

AS 220	Feeds and Nutrition	3
AS 425	Advanced Nutrition	4
Chem 106	General Chemistry	4

Take one course:

AS 320	Feedlot Management	3
AS 435	Equine Nutrition	4
Total Credits		14

Beef Production

Take these courses:

AS 220	Feeds and Nutrition	3
AS 360	Beef Production	4

Take 5 - 7 credits:

AGBUS 450	Agribusiness Management	3
AS 330	Artificial Insemination	2
AS 333	Livestock Genetics	3
AS 336	Animal Reproduction	3
AS 355	Meats	4
AS 425	Advanced Nutrition	4
AS 430	Applied Reproduction	4
Total Credits		12

Agribusiness, Plant and Animal Sciences

Brigham Young University-Idaho 2009-2010

Course Descriptions	Credits*	Course Descriptions	Credits*
AGBUS 100 Ag Orientation Fee: \$25.00 An orientation to successful business and living practices, and a survey of occupational opportunities in the Agriculture field. (Fall, Winter)	(1.0:1:0)	AGBUS 435 Agriculture Commodity Marketing Prerequisite: Senior standing or consent of instructor. AgBus 210, AgBus 347, AgBus 430, FDMAT 221 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)	(3.0:3:1)
AGBUS 180 Ag Accounting and Computer Applications 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)	(4.0:3:3)	AGBUS 440 Agribusiness Finance Prerequisite: Junior standing (strong accounting background) AgBus 180, AgBus 210, FDMAT 221 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)	(3.0:3:0)
AGBUS 200 Agricultural Spanish 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. (As needed)	(3.0:3:0)	AGBUS 450 Agriculture Business Management Prerequisite: Senior standing or consent of instructor. AgBus 180, AgBus 210 Application of approved practices, concepts, principles and tools of management in an agricultural business. (Fall, Winter)	(3.0:3:1)
AGBUS 210 Agricultural Economics 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. (Fall, Winter, Spring)	(3.0:3:0)	AGBUS 498 Occupational Internship II 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)	(1.0:0:0)
AGBUS 232 Agricultural Sales and Merchandising The retail sales and merchandising of agricultural products. (Winter)	(3.0:2:2)	AGED 297 AgEd Practicum Prerequisite: AGED Majors only (825), Junior or Senior standing. 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. (Winter)	(2.0:1:2)
AGBUS 238 Agribusiness Leadership Fee: \$25.00 Provides opportunities to develop leadership and increase occupational competency. (Fall, Winter)	(3.0:3:0)	AGED 380 Connecting Education & Employment Prerequisite: AgEd Majors only (825), Junior or Senior standing. 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)	(3.0:3:0)
AGBUS 347 Agricultural Marketing Fee: \$10.00 Prerequisite: Econ 111 Fundamental marketing principles applied to agricultural marketing. (Fall, Winter)	(3.0:3:1)	AGED 450 Curriculum Development/Assessment in Occupational Education Prerequisite: AgEd Majors only (825), Junior or Senior standing. This course will help students develop an 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. (Winter)	(2.0:2:0)
AGBUS 398 Occupational Internship 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)	(1.0:0:0)	AGED 452 Methods of Teaching Agriculture Prerequisite: AgEd Majors only (825), Senior standing. Competence in teaching methods, along with competence in the technical subject matter is essential to be effective as a teacher of agriculture. (Winter)	(3.0:3:0)
AGBUS 410 Agricultural Policy and Trade Prerequisite: Junior standing or consent of instructor AgBus 210 and Econ 111 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)	(3.0:3:0)	AGED 460 Experiential Laboratory Methods Prerequisite: AgEd Majors only (825), Senior standing. This course is to help students develop specific skill sets in agricultural 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. (Winter)	(2.0:1:2)
AGBUS 420 Agribusiness Operations Analysis 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, Spring)	(3.0:3:1)	AGRON 115 Feeding the World 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. (As needed)	(3.0:3:0)
AGBUS 430 Agricultural Price Analysis 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, Spring)	(3.0:3:1)		

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<p>AGRON 122 Introduction to Plant Science (3.0:3:0) The basic principles of structure, form and function of plants in both the higher and lower plant kingdoms. (Fall, Winter)</p>	<p>AGRON 435 Potato Science (3.0:3:1) Fee: \$25.00 Prerequisite: Agron 122 or Agron 220 Basic understanding and practical application of potato production. Students will become more knowledgeable of potato management. (Winter, Spring odd years)</p>
<p>AGRON 220 Introduction to Soils (3.0:3:0) 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>AGRON 440 Crop Physiology (3.0:3:1) Prerequisite: Agron 122 or Bio 100; Chem 101 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. (Winter, Spring)</p>
<p>AGRON 220L Introduction to Soils Lab (1.0:0:2) Hands on experience determining soil texture, structure, color, measuring soil pH, nitrates, and fertilizers. (Fall, Winter, Spring)</p>	<p>AGRON 445 Crop Advisor Certification (2.0:2:0) Prerequisite: Agron 122 or Agron 220, Agron 321 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>AGRON 270 Agro-Ecology (3.0:2:2) Travel Fee: \$25.00 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, Spring)</p>	<p>AGRON 455 Cereal Crops (3.0:3:0) Fee: \$25.00 Prerequisite: Agron 122 or Agron 220 Crop 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. (Winter, Spring odd years)</p>
<p>AGRON 297 Agricultural Practicum (2.0:0:0) Development and improvement of selected occupational competencies. (As needed)</p>	<p>AGTEC 122 Small Engines (2.0:1:3) 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>AGRON 300 Agriculture Seminar (1.0:1:0) 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>AGTEC 124 Compact Equipment (2.0:1:3) Fee: \$10.00 Test and repair procedures for engines, electrical, power trains, and hydraulics found on compact equipment. (As needed)</p>
<p>AGRON 310 Tree Fruit and Vegetable Management (3.0:3:1) Prerequisite: Agron 122 or Agron 220 Shows the importance of fruit and vegetable crops in U.S. agriculture, and their contribution to the national economy and the human diet. (Fall, Spring as needed)</p>	<p>AGTEC 125 Agriculture Maintenance Welding (3.0:2:2) 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. (Winter as needed)</p>
<p>AGRON 321 Soil Fertility and Plant Nutrition (3.0:2:2) Prerequisite: Agron 122 or Agron 220 Field identification and measurement of plant nutrient deficiencies, petiole analysis and crop fertilization methods. (Fall, Spring)</p>	<p>AGTEC 132 Climate Control (2.0:1:3) System theory, diagnosis, and repair of agricultural systems. (As needed)</p>
<p>AGRON 325 Irrigation and Drainage (3.0:3:1) Fee: \$25.00 Prerequisite: Agron 122 or Agron 220 Principles and application of soil, water and plant relations, agricultural meteorology, and irrigation. (Fall, Spring even years)</p>	<p>AGTEC 220 Preventive Maintenance & Machinery Management (3.0:2:3) Fee: \$10.00 An overview of preventive maintenance and care of equipment. (Fall, Winter, Spring)</p>
<p>AGRON 330 Forage Crops (3.0:3:0) Fee: \$25.00 Prerequisite: Agron 122 or Agron 220 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, Spring, even years)</p>	<p>AGTEC 230 Agriculture Electrification - AC (2.0:1:3) Principles, systems and applications of electrical energy in agriculture. As needed</p>
<p>AGRON 420 Crop Protection (4.0:3:2) Prerequisite: Agron 122 or Agron 220 This course will examine crop protection through the use of pesticides, cultural and biological control methods. (Fall, Spring)</p>	<p>AGTEC 286 Introduction to Geographical Information Systems (3.0:2:2) This course is designed to teach the basics 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. (Spring as needed)</p>
<p>AGRON 425 Soil Management (3.0:3:1) Prerequisite: Agron 220 & 220L; Chem 101 or higher; FDMat 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, Spring)</p>	<p>AGTEC 290 Individual Study (2.0:0:0) Independent study, special assignment and/or advanced inquiry in an area of special interest, approved after consultation with instructor in charge.</p>

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<p>AGTEC 320 Agricultural Machinery (3.0:2:2) Fee: \$10.00 Selection, servicing, maintenance, operation, testing, repair, use and general management of agricultural equipment. (Winter)</p> <p>AGTEC 335 Electronic Systems Diagnostic and Repair (4.0:3:3) 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, Winter even years)</p> <p>AGTEC 360 Agricultural Hydraulics (4.0:3:3) A study of fundamental and advanced principles governing and regulating the transmission and control of fluid power hydraulics. Trouble shooting and system repairs. (Fall odd years, Winter)</p> <p>AGTEC 465 Machinery Management (3.0:3:0) A study of machinery efficiency, matching machines, and horsepower. Analysing and estimating costs associated with keeping machines running. (As needed)</p> <p>AGTEC 474 Mechanical Systems Analysis (3.0:2:3) Prerequisite: AgTec 220, AgTec 335 Testing and diagnosis for various pieces of equipment related to agriculture systems pertaining to the production of food. (Winter, Spring as needed)</p> <p>AGTEC 486 Advanced Geographical Information Systems in Agriculture and Natural Resources (3.0:2:2) Prerequisite: AgTec 286 This course is designed to apply geographical information systems (GIS) to agriculture and natural resource disciplines. The course will focus on collecting, analysing, interpolating, and decision making using GIS software and GPS equipment. (Fall, Winter, Spring, as needed)</p> <p>AS 145 Trailriding (1.0:0:2) Fee: \$150.00 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. (As needed)</p> <p>AS 150 Introduction to Livestock Production (3.0:3:0) 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, Winter, Spring)</p> <p>AS 165 Live Animal and Carcass Evaluation (2.0:1:2) Prerequisite: AS 150 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 or Spring)</p> <p>AS 215 Anatomy & Physiology (4.0:3:2) Fee: \$20.00 A systems approach to the study of animal anatomy and physiology. Includes structure and function of the cell, skeletal, muscular, nervous, digestive and reproductive systems. Practical applications of anatomy and physiology and their relation to diseases and disorders. (Fall, Winter)</p> <p>AS 220 Feeds & Nutrition (3.0:3:0) Prerequisite: FDMat 110 & 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>AS 247 Animal Handling and Behavior (2.0:1:3) Fee: \$30.00 Animal handling and behavior is an introductory approach to the technique of pressure and release for low stress livestock handling. Students who complete this course develop a higher level of communication with all species of animals including cattle, sheep, horses, and humans. Students will discuss theory in classroom setting while gaining hands on experience in laboratory "proving". This course is not designed as a horse training class per say, but rather a prerequisite for AS 347 and provides the foundation for advance horsemanship. (Fall, Winter, Spring).</p> <p>AS 315 Animal Health (3.0:2:3) Fee: \$10.00 Prerequisite: AS 215 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, Spring)</p> <p>AS 320 Feedlot Management (3.0:3:0) Fee: \$20.00 Prerequisite: AS 220 Designed for students interested in pursuing a career in beef feedlot management or other related agribusiness areas. (Fall or Winter)</p> <p>AS 330 Artificial Insemination (2.0:1:2) Fee: \$10.00 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>AS 333 Livestock Genetics (3.0:3:0) 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, Winter)</p> <p>AS 336 Animal Reproduction (3.0:3:1) 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>AS 340 Horse Production (3.0:3:1) Prerequisite: AS 215 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. (Fall, Spring)</p> <p>AS 347 Advanced Animal Handling & Behavior (2.0:1:3) Fee: \$150.00 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>AS 350 Small Animal Production (4.0:3:2) Fee: \$10.00 Prerequisite: AS 150, AS 220, AS 336 The study of the principles and management techniques with swine, sheep, goats, and poultry. Students will learn how to transform the investment of dollars and time into a profitable and rewarding farm enterprise. (Fall, Spring)</p>
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AS 355 Meats

(4.0:3:3)

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

(4.0:3:2)

Fee: \$10.00

Prerequisite: AS 150, 220 & 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, Winter)

AS 370 Dairy Production

(3.0:2:2)

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

(Fall, Spring)

AS 425 Advanced Nutrition

(4.0:3:2)

Fee: \$5.00

Prerequisite: AS 220, AS 315, AS 336

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

(Fall, Winter)

AS 430 Applied Reproduction

(4.0:3:3)

Fee: \$20.00

Prerequisite: AS 336 and AS 330 or proficiency in artificial insemination.

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

(Winter, Spring)

AS 435 Equine Nutrition

(4.0:3:2)

Prerequisite: AS 220, AS 315, AS 336

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

(Winter or Spring)

AS 490 Individual Studies

(1.0-3.0:0:0)

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

(Upon request)