

**Institutional Effectiveness
2024-2025**

Program: Animal Science BS

College and Department: College of Agriculture & Human Ecology, School of Agriculture

Contact: Dr. James Baier

Mission:

School of Agriculture's Mission Statement: Our mission is to prepare students for leadership roles in the food, fiber, and natural resource professions by providing state of the art experiential learning through agriculture. The School of Agriculture (SOA) mission statement flows from the TTU Mission Statement "to provide leadership and outstanding programs in . . . agriculture and human ecology, nursing, music, art and interdisciplinary studies." The SOA mission statement additionally supports the TTU Flight Plan to improve the undergraduate experience.

The SOA offers a Bachelor of Science degree in Animal Science focusing on one of 3 concentrations: Animal Science Industries (ANSI), Pre-Veterinary Science (ANSV), and Poultry Science (ANPS). We prepare our students to enter careers in the various fields of animal and poultry science industries, colleges of veterinary medicine in pursuit of the Doctor of Veterinary Medicine degree (ANSV), and other graduate programs in animal and poultry sciences.

Animal Science deals with all phases of the livestock, dairy, and poultry industries. Areas emphasized are nutrition, physiology, genetics, management technology, quality control and environmental regulations. Graduates enter careers in farm management, Extension Service, food quality control, governmental health agencies, farm credit institutions, and agricultural sales and management. The primary objective of the Pre-Veterinary Science concentration is to provide students with pre-requisites necessary for entry into and completion of academic programs in colleges of veterinary medicine that lead to the Doctor of Veterinary Medicine degree.

The School of Agriculture has access to two working farms and a poultry science research center. In 1965 the Shipley Farm (300 acres) was acquired and houses the Hyder-Burks Pavilion, horticultural greenhouses, the organic farming operation, sheep, hogs, beef cattle, poultry, varied forage and row crops. Finally, in 2009, the Oakley Farm (1800+ acres) expanded the possibilities for research and teaching with access to 700 plus cows and calves with additional cropland and potential locations for greenhouses and other agricultural enterprises. These facilities are not supported by direct line funding by the state and therefore must pay their own way, however, all facilities are dedicated to the overall educational experience of our students. The School of Agriculture began the operation of the Poultry Science Research Center and Aviagen Poultry Science Laboratory in the spring of 2023. Use of this facility will enhance the research component of the program for faculty and undergraduate students and will

strengthen the Agriculture concentration of the Environmental Science doctoral program and M.S. degree program in Agricultural Technologies.

Our vision states, "We are the hallmark program of experiential education in agriculture."

Attach Curriculum Map (Educational Programs Only):

Attached Files: See Appendix 1

PG1: Real World Experiences

Define Outcome:

The Animal Science Program will provide students with "hands on" and "real world" experiences providing unique learning experiences for students.

Assessment Methods:

- Graduating Exit Interview and Survey
- School of Agriculture Alumni Follow-Up Survey

Criteria for Success (Thresholds for Assessment Methods):

Graduating Exit Interview and Survey: At least 75% of the graduating students feeling that the "hands on" and "real world" experiences were at least beneficial.

School of Agriculture Alumni Follow-Up Survey: At least 75% of the Alumni feel that the "hands on" and "real world" experiences were at least beneficial.

Results and Analysis:

Graduating Exit Interview and Survey

Graduating senior assessment of animal science program in providing students with "hands on" and "real world" learning experiences							
	Percent of Respondents						
CATEGORY	COURSES IN TECHNICAL AGRICULTURE	LAB EXPERIENCE	FARM/FIELD EXPERIENCE	ANIMAL SCIENCE COURSES	WORK EXPERIENCE	INTERNSHIPS	LAB EXPERIENCE IN AG COURSES
Extremely Beneficial	25%	50%	89%	67%	57%	38%	56%
Beneficial	38%	38%	11%	33%	14%	25%	33%
Fairly Beneficial	13%	12%	-	-	-	13%	11%
Hardly Beneficial	25%	-	-	-	29%	13%	-
Not Beneficial	-	-	-	-	-	13%	-
Students (N)	8	8	9	9	7	8	9

School of Agriculture Alumni Follow-Up Survey

Alumni assessment of animal science program in providing students with "hands on" and "real world" learning experiences						
	COURSES IN TECHNICAL AG	LAB EXPERIENCE	FARM/FIELD EXPERIENCE	ANIMAL SCIENCE COURSEWORK	INTERNSHIPS	LAB EXPERIENCE IN AG COURSES
Extremely Beneficial	20%	38%	56%	45%	78%	43%
Beneficial						
Fairly Beneficial	53%	31%	19%	32%	11%	33%
Hardly Beneficial	13%	19%	13%	9%		14%
Not Beneficial	13%	13%	13%	14%	11%	10%
Students (N)	15	16	16	22	9	21

Use of Results to Improve Outcomes:

Data in both Senior Exit Interview and Alumni Follow-up surveys contain only data from the Animal Science and Pre-Veterinary Science concentrations in the Bachelor of Science Degree in Agriculture. Data from senior exit interviews indicates that the Animal Science program is effective in providing students with real world experiences needed for successful careers. Although at least two-thirds of alumni also responded that the program is at least "Fairly Beneficial" in all respective categories, about one-third indicated there is room for improvement of the program in this area.

Reviewing data from the Alumni Follow-Up Study has provided insight into setting a goal of at least 65% of Animal Science students participate in an internship, research, or work study experience in the animal science field prior to graduation. This data can be collected at the Graduating exit interview.

A new Alumni Follow-Up Study will be conducted in 2025, and questions will be designed for the BS Animal Science program. Past Alumni Studies were not separate or designed for any specific major. The new design Study will provide a better insight into the Animal Science program.

PG2: Develop Team-Building and Problem-Solving Skills

Define Outcome:

The Animal Science program will provide students with opportunities to participate in extracurricular activities and programs that enhance their leadership and social development and to develop team-building and problem-solving skills beyond the classroom to enhance the food, agriculture, and natural resource system.

Assessment Methods:

- a. Graduating Exit Interview and Survey
- b. School of Agriculture Alumni Follow-Up Survey

Criteria for Success (Thresholds for Assessment Methods):

Graduating Exit Interview and Survey: Strive for at least 75% of graduating students to realize that Leadership Training in Agricultural Clubs and Organizations that is beyond the classroom to be beneficial.

School of Agriculture Alumni Follow-Up Survey: Expect that over 75% of Alumni find that Leadership Training in Agricultural Clubs and Organizations was beneficial.

Results and Analysis:

Graduating Exit Interview and Survey

Graduating senior assessment of opportunities to develop team building and problem-solving skills

	COURSES IN LANGUAGE AND COMMUNICATION SKILLS	TRAINING IN PUBLIC SERVICE	LEADERSHIP TRAINING IN AGRICULTURAL COURSES	LEADERSHIP TRAINING IN NON- AGRICULTURAL COURSES	VERBAL COMMUNICATION SKILLS	WRITTEN COMMUNICATION SKILLS	PARTICIPATIONS IN CLUBS AND ORGANIZATIONS	LEADERSHIP AND SOCIAL DEVELOPMENT ENHANCEMENT
Extremely Beneficial	13%	14%	67%	50%	44%	44%	50%	50%
Beneficial	13%	14%	17%	33%	22%	33%	33%	25%
Fairly Beneficial	50%	14%	17%	-	11%	22%	-	13%
Hardly Beneficial	13%	57%	-	17%	22%	-	17%	13%
Not Beneficial	13%	-	-	-	-	-	-	-
Students (N)	8	7	6	6	9	9	6	8

School of Agriculture Alumni Follow-Up Survey

Alumni assessment of opportunities to develop team-building and problem-solving skills							
	COURSES IN LANGUAGE AND COMMUNICATION SKILLS	PROFESSIONAL EXPERIENCES THAT ENHANCE LEADERSHIP AND SOCIAL DEVELOPMENT	LEADERSHIP TRAINING IN NON- AGRICULTURAL COURSES	VERBAL COMMUNICATION SKILLS	WRITTEN COMMUNICATION SKILLS	PARTICIPATIONS IN CLUBS AND ORGANIZATIONS	LEADERSHIP IN CLUBS AND ORGANIZATIONS
Extremely Beneficial	46%	35%	29%	-	-	38%	33%
Beneficial	-	27%	-	-	-	-	-
Fairly Beneficial	38%	27%	35%	-	-	38%	33%
Hardly Beneficial	8%	4%	18%	-	-	8%	17%
Not Beneficial	8%	8%	18%	-	-	15%	17%
Students (N)	13	26	17	-	-	13	6

Use of Results to Improve Outcomes:

Results of both surveys appear to indicate that improvement of opportunities to develop leadership and problem-solving skills should be a goal for the new Animal Science program. The School of Agriculture has two

new faculty members in the Animal Science discipline who benefit from more current methods in teaching and is in the process of hiring a third new faculty member in that area. The expectation is that the program will improve with the introduction of newer technological and pedagogical methods into the program.

SLO1: Knowledge of Concepts in Animal Science

Define Outcome:

On successful completion of the degree in Animal Science, students will demonstrate knowledge of concepts in nutrition, reproduction, anatomy and physiology, genetics, meat and animal products related to animal science.

Assessment Methods:

ACAT - nationally standardized comprehensive senior exit exam.

Criteria for Success (Thresholds for Assessment Methods):

ACAT Standardized Exam: Students will be expected to score above the national average on the Animal Science portion of the ACAT.

Results and Analysis:

ACAT - nationally standardized comprehensive senior exit exam

ACAT SCORES FOR DEGREES IN THE SCHOOL OF AGRICULTURE		
		2024-2025
DISCIPLINE	DEGREE	MEAN PERCENTILE
Animal Science	ASCI	59
	AGRI	43
Plant Science	ASCI	67
	AGRI	77
Soil Science	ASCI	47
	AGRI	58
Agricultural Mechanics	ASCI	65
	AGRI	84
Agricultural Business	ASCI	46
	AGRI	51
Overall Percentile	ASCI	54
	AGRI	64

Average ACAT scores for students in the Animal Science degree program were slightly higher than those in the Agriculture degree program in "Animal Science" and above the 50-percentile national average. Animal Science scores were 16 percentage points higher in "Percentile" comparisons, which might be expected given that the pre-veterinary science graduates who have finished the curricula in that program generally take more animal science area courses. Animal Science students "Overall Percentile" scores are lower than the BS Agriculture scores which may be attributed to the Animal Science curriculum has less agriculture electives than the BS of Agriculture curricula.

Use of Results to Improve Outcomes:

The School of Agriculture initiated an effort to provide students in both the Agriculture and Animal Science programs different exam review options. The results from the ACAT exam have provided insight on where to focus effort to improve ACAT exam outcomes.

SLO2: Understanding of Management Technology, Quality Control, and Environmental Regulations

Define Outcome:

On successful completion of the degree in Animal Science, students will demonstrate understanding of the role of management technology, quality control, and environmental regulations in animal production.

Assessment Methods:

- ACAT - nationally standardized comprehensive senior exit exam
- Graduating Exit Interview and Survey
- School of Agriculture Alumni Follow-Up Survey

Criteria for Success (Thresholds for Assessment Methods):

- **ACAT:** Students will be expected to perform above the national average on the nationally standardized comprehensive senior exit exam.
- **Graduating Exit Interview and Survey:** At least 75% of the Animal Science students will feel they have appreciable knowledge of management technology, quality control, and environmental regulations in animal production
- **School of Agriculture Alumni Follow-Up Survey:** At least 80% of the Animal Science Alumni respond that they were properly prepared in the knowledge of management technology, quality control, and environmental regulations in animal production upon graduation.

Results and Analysis:

ACAT -Nationally Standardized Comprehensive Senior Exit Exam

ACAT SCORES FOR DEGREES IN THE SCHOOL OF AGRICULTURE		
		YEAR
		2024-2025
DISCIPLINE	DEGREE	MEAN PERCENTILE
Animal Science	ASCI	59
	AGRI	43
Plant Science	ASCI	67
	AGRI	77
Soil Science	ASCI	47
	AGRI	58
Agricultural Mechanics	ASCI	65
	AGRI	84
Agricultural Business	ASCI	46
	AGRI	51
Percentile	ASCI	54
	AGRI	64

Graduating Senior Assessment:

Graduating senior assessment of understanding of management technology, quality control, and environmental regulations					
	COURSES IN TECHNICAL AGRICULTURE	COURSES IN BASIC SCIENCES	RATIO OF TECHNICAL TO BASIC COURSES	COURSES IN COMPUTER USE AND APPLICATION	DIAGNOSTIC OR SCIENCE LAB EXPERIENCE
Extremely Beneficial	25%	13%	44%	22%	50%
Beneficial	38%	38%	2%	11%	38%
Fairly Beneficial	13%	25%	22%	56%	13%
Hardly Beneficial	25%	13%	11%	11%	-
Not Beneficial	-	13%	-	-	-
Students (N)	8	8	9	9	8

School of Agriculture Alumni Follow-Up Survey:

Alumni assessment of understanding of management technology, quality control, and environmental regulations		
	COURSES IN TECHNICAL AGRICULTURE	COURSES IN COMPUTER USE AND APPLICATION
Extremely Beneficial	45%	30%
Beneficial	-	-
Fairly Beneficial	36%	40%
Hardly Beneficial	9%	20%
Not Beneficial	9%	10%
Students (N)	11	10

Use of Results to Improve Outcomes:

Students are apparently receiving and retaining animal science knowledge at least in the overall discipline of Animal Science compared to other students in the School of Agriculture, but it appears that more emphasis should be placed on providing students with computer skills necessary for success in the workplace. That seems to be evident in both the Senior Exit and Alumni Surveys and has been indicated to faculty by potential employers via personal communication.

SLO3: Application of Leadership and Professional Skills

Define Outcome:

On successful completion of the degree in Animal Science, students will demonstrate application of leadership and professional skills to complex issues relevant to animal science.

Assessment Methods:

- IDEA course evaluations
- Graduating Exit Interview and Survey
- School of Agriculture Alumni Follow-Up Survey
- Industry Professionals

Criteria for Success (Thresholds for Assessment Methods):

IDEA course evaluations:

- Graduating Exit Interview and Survey
- School of Agriculture Alumni Follow-Up Survey
- Industry Professionals

Results and Analysis:

IDEA Course Evaluations:

IDEA Factors related to leadership and professional skills	
	YEAR
FACTOR	2024-2025
Encouraged students to use multiple resources (e.g., Internet, library holdings, outside experts) to improve understanding [*]	4.03
Created opportunities for students to apply course content outside the classroom [*]	4.34
Involved students in hands-on projects such as research, case studies, or real life activities [*]	4.32
Gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories) ^{**}	4.19
Developing specific skills, competencies, and points of view needed by professionals in the field most closely related to this course ^{**}	4.14
Learning to apply knowledge and skills to benefit others or serve the public good ^{**}	3.91
[*] 1=Hardly ever, 2=Occasionally, 3=Sometimes, 4=Frequently, 5=Almost always	
^{**} 1=No apparent progress, 2=Slight progress, 3=Moderate progress, 4=Substantial progress, 5= Exceptional progress	

Graduate exit interview and survey:

Graduating senior assessment of opportunities to develop team-building and professional skills					
	PERCENT OF RESPONDENTS				
	TRAINING IN PUBLIC SERVICE	LEADERSHIP TRAINING IN AGRICULTURAL COURSES	LEADERSHIP TRAINING IN NON- AGRICULTURAL COURSES	PARTICIPATION IN CLUBS AND ORGANIZATIONS	LEADERSHIP AND SOCIAL DEVELOPMENT ENHANCEMENT
Extremely Beneficial	33%	67%	50%	50%	50%
Beneficial	33%	17%	33%	33%	25%
Fairly Beneficial	-	17%	-	-	13%
Hardly Beneficial	17%	-	17%	17%	13%
Not Beneficial	17%	-	-	-	-
Students (N)	6	6	6	6	8

School of Agriculture Alumni Follow-Up Survey:

Alumni assessment of opportunities to develop team-building and professional skills				
	PERCENT OF RESPONDENTS			
	EDUCATIONAL EXPERIENCES THAT ENHANCE LEADERSHIP AND SOCIAL DEVELOPMENT	LEADERSHIP TRAINING IN NON- AGRICULTURAL COURSES	PARTICIPATION IN CLUBS AND ORGANIZATIONS	LEADERSHIP IN CLUBS AND ORGANIZATIONS
Extremely Beneficial	35%	29%	38%	33%
Beneficial	27%	-	-	-
Fairly Beneficial	27%	35%	38%	33%
Hardly Beneficial	4%	18%	8%	17%
Not Beneficial	8%	18%	15%	17%
Students (N)	26	17	13	6

Use of Results to Improve Outcomes:

Although tending toward the upper end of the beneficial scale, all measures of assessment indicated that the program should improve methods of helping students develop more skills in leadership, teamwork, and communication. The program appears to provide somewhat better preparatory skills in the technical and factual knowledge areas than in skills preparing graduates to deal with other people. The addition of new faculty members in the Animal Science degree program creates a potential tool to improve areas not meeting expectations, especially concerning public service training.

SLO4: Critical Thinking and Problem Solving

Define Outcome:

On successful completion of the degree in Animal Science, students will demonstrate application of critical thinking skills and problem-solving abilities through a variety of animal production situations.

Assessment Methods:

- a. California Critical Thinking Skills Test (CCTST)
- b. IDEA Student Course Evaluations

Criteria for Success (Thresholds for Assessment Methods):

Animal Science students will score at or above TTU's student body average on the **California Critical Thinking Skills Test (CCTST)**.

Animal Science **IDEA** course evaluation factors relating to critical thinking and problem-solving skills score above moderate progress (above 3) or frequently engaged students in critical thinking and problem-solving (above 4)

Results and Analysis:

California Critical Thinking Skills Test (CCTST):

California Critical Thinking Skills Exam	
	Year
Group	2024-2025
Animal Science	72.8
School of Agriculture	69.8
College of Agriculture and Human Ecology	72.8
TTU Total	74.8
CCTST Standards	72.8

Average test scores for Animal Science students were below all the comparable metrics from the college and university. This is not characteristic of Animal Science professionals where critical thinking and problem-solving are required.

IDEA Course Evaluations:

IDEA Factors related to critical thinking and problem solving skills	
	YEAR
FACTOR	2024-2025
Encouraged students to reflect on and evaluate what they have learned*	4.30
Stimulated students to intellectual effort beyond that required by most courses*	4.03
Created opportunities for students to apply course content outside the classroom*	4.33
Gave projects, tests, or assignments that required original or creative thinking*	4.00
Learning to apply course material (to improve thinking, problem solving, and decisions)**	4.13
Learning to analyze and critically evaluate ideas, arguments, and points of view**	3.73
Learning appropriate methods for collecting, analyzing, and interpreting numerical information**	3.89
* 1=Hardly ever, 2=Occasionally, 3=Sometimes, 4=Frequently,	
** 1=No apparent progress, 2=Slight progress, 3=Moderate progress, 4=Substantial progress, 5= Exceptional progress	

Students acknowledged that the processes to develop critical thinking and problem-solving skills are delivered however they responded that more emphasis should be applied to how to utilize those processes.

Use of Results to Improve Outcomes:

New tenure track faculty have been hired, and one tenure track position is being advertised. The influx of new ideology will provide students with a new perspective as well as new technologies that will stimulate students to develop critical thinking and problem-solving skills. Critical thinking and problem-solving skills are very important in the animal science industries especially in pre-vet medicine.

Summative Evaluation:

- ACAT scores in test areas outside of the Animal Science are
- CCTST scores are lower than the BS of Agriculture scores and also the lowest in the college

Assessment Plan Changes:

All outcomes and assessments will be reevaluated for the next cycle due to the influx of new tenure track faculty.

Appendix 1: Animal Science BS Curriculum Map
Appendix 1: SOA Core Course Map

Course No.	Title	Career Readiness	Critical Thinking & Problem Solving	Service Learning	Leadership
AGRN 1100	Plant Science	x	x		
AGRN 1110	Plant Science Lab	x	x		
AGRN 2400	Intro to Soils	x	x		
ANS 1200	Intro Animal Science	x	x		
ANS 1210	Intro Animal Science Lab	x	x		
AGBE 2100	Economics of Agriculture	x	x		
AGET 2110	Ag Engineering Tech	x	x		
AGET 2115	Ag Engineering Tech Lab	x	x		
AGR 1020	Connections in Agriculture	x	x	x	x
AGR 2022	Professionalism in Ag	x	x		x
AGR 3000	Leadership & Service	x	x	x	x
AGR 3200	Study Abroad Exploration	x	x	x	x
AGR 4500	Senior Seminar	x	x	x	x