Academic Program Review Report

Animal Science, B.S.

2018-2019

Executive Summary

Institution Name: Oklahoma Panhandle State University
Program Name and State Regents Code: Animal Science BS 003
List Any Options: General Meats, Equine, Nutrition, Livestock and Production Management, Business
Date of Review: November 8, 2018 **Recommended Date of Next Review:** Fall 2023

Centrality to Institutional Mission:

The program of Animal Science follows the Oklahoma Panhandle State University mission of "Rooted in "Progress through Knowledge," OPSU is committed to promoting excellence in the preparation of students for success in a global community." This is done through its goals, which align to the primary points of "progress through knowledge… in a global community" with a focus on oral and written communication, analytical and quantitative reasoning, and social responsibility and cultural awareness.

Program Objectives and Goals:

Goal 1: Oral and Written Communication: Communicate effectively using written, oral, and symbolic languages

Student Learning Objectives:

1) Students will present reports.

2) Students will evaluate classifications.

3) Students will develop note taking, research, and technical writing skills.

4) Students will orally explain their thought processes.

5) Students will professionally present their work.

6) Students will design and developing a sheep or goat production system.

Goal 2: Analytical and Quantitative Reasoning: Read and think critically by analyzing, assimilating, and applying information

Student Learning Objectives:

1) Students will be given the background and the analysis methods to evaluate and determine the classification and grading of beef and lamb carcasses for wholesale marketing according to the United States Department of Agriculture Standards.

2) Students must be successful in Artificially Inseminating three cows.

3) Students will be required to rank livestock and calculate the final Yield and Quality Grade and the current market price.

4) Students must successfully harvest one pig by themselves.

5) Students will assemble a representative model from various materials.

6) Students will assess the correct formulation to determine genetic principles and apply the principles to breeding of animals.

Goal 3: Social Responsibility and Cultural Awareness: Be an aware and active participant in the global, dynamic community

Student Learning Objectives:

1) Students will learn how to select and prepare livestock for competition at local, state, and national competitions.

2) Students will research and report on a Bioterrorism disease as well as an Emerging Disease.

Quality Indicators:	Student benchmarks were met in all student-learning objectives at the time of the Program Review. These benchmarks and objectives have been revised to encourage program growth.
	Student evaluations are used by faculty regularly to make changes such as continuing an Equine Option, and offering a Companion Animal course.
	Learning environments for the student are becoming more effective. Faculty in the department participated in a campus wide evaluation of the learning management system; the digital learning space of D2L was reevaluated Summer 2018 and found to still be a great fit for our students and their learning.

Productivity for Most Recent 5 Years:	**Number of Degrees:** 91, average: 18.2 **Number of Majors:** 323, average: 64.6				
Other Quantitative Measures:	Number of Courses for Major: 11 Student Credit Hours in Major: 26 2017/2018 Direct Instructional Costs: $183,961 Supporting Credit Hour Production: 12				
	Faculty Member	Credential		Institution	
	Sandol Johnson	PhD		Oklahoma State University	
	Daren Stephens	MS		Kansas State University	
	Number of FTE faculty in specialized courses: 2				
		Year 1 (14/15)	Year 2 (15/16)	Year 3 (16/17)	Year 4 (17/18)
	Employed (if known)	2	0	1	1
	Licensed (if known)	13	11	24	15
Duplication and Demand	Oklahoma Panhandle State University is in the center of the most productive agricultural area within the United States. Many of the area agricultural products are exported world-wide. A need for agricultural experts is high in the area. The closest university with a comparable program is West Texas A&M University.				
Effective Use of Resources	2017/2018 Cost to operate program per student credit hour: $272.28 Faculty/student ratio for 2017/2018: 1/21.5				
Strengths and Weaknesses	Strengths include the core Animal Science courses that are taught which mirror larger universities with the same degree. Students are very marketable with their degree within industry, graduate school, and professional schools. This program has been developing and offering more online courses each year to accommodate students that work full-time or those returning to finish their degrees. Weaknesses include the large variety of courses each faculty must instruct. Many courses are not sequential and this needs to be improved. A low number of qualified faculty to teach these courses is also a concern.				
Recommendations	Maintain at current level.				

Analysis and Assessment

Program: Animal Science, B.S.

Mission: The mission of the Animal Science Department is to provide higher education through the various courses available within the department. The Animal Science Department provides opportunities for students to have learning experiences in and out of the classroom, but also enrichment through study of various cultures in our unique discipline. These experiences prepare our students to move into the workforce after graduation within the industry, government, education, and services aspects of agriculture.

Last Cycle's Goals and Learning Objectives:

Goal 1- Oral and Written Communication: Communicate effectively using written, oral, and symbolic languages.			
Student Learning Outcome(s)	**Courses where Assessed**	**Results**	**Changes Made**
Students will be able to present breeds of animals and current hot topics information to the class and also to other faculty members.	ANSI 1124, Introduction to Animal Science	All students attained a Rubric score of 3 or 4 on an oral presentation on a topic within the class.	The audience, fellow students and outside guests completed a rubric on each oral presentation.
Students will present a report over the hoof ailment.	ANSI 1123 Introduction to Equine Science	Students were effective in writing in APA and Animal Science form. 90% attained 75%.	Assign a specific topic. Students had to write up a report.
Students must find horses that are very similar and make two classes (4 horses per class) to evaluate.	ANSI 1132 Equine Evaluation	Overall score of 4 out of 5 for 60% of the students. A 3 out 5 was the average for 40% for the students.	Students write up the reasons they chose the horses. Also, video of the student discussing or their order of evaluation.
Students developed note taking skills in evaluating live animals as well as giving "oral reasons" to display their knowledge of evaluating the live animals in a particular ranking.	ANSI 2112 Introductory Live Animal Evaluation	Using a national grading score with a total score of 50 points, 100% of the students had attained at least a 35 out of 50 point score.	There have been no changes made in this oral description of ranking animals. The oral presentation has been a classic method of discussion of judging animals.
Students developed writing skills in the form of a technical report of their field trips by asking questions of the persons	ANSI 2124, Livestock Feeding	Approximately half of the class would go on Field Trips to various local industries.	Instead of just answering questions in a one line answer, the Instructor required a written technical report.

Student Learning Outcome(s)	Courses where Assessed	Results	Changes Made
Students will advance in their ability to orally explain their placing (ranking) of a set of animals.	ANSI 3113 Livestock Judging and Meat Animal Evaluation	Starting, students average a 35 out of 50 points in the oral reasons. At the end, 45 out of 50.	Begin working with the students immediately in the semester with the oral reasons.
Students learned how to research and then assemble the information into a teachable format for rest of the class.	ANSI 3133, Livestock Entomology	Students developed a Pest Management Plan for a specific Livestock.	Students present the Power Point for the Livestock Pest in front of the class and field questions from their fellow students.
Students were able to develop a professional presentation of their work.	ANSI 3234, Industry Internship	100% of students completed at least 80% on presentation and journal.	Professional presentation that they would be able to give to their company.
Students' assignment includes management plan for designing and developing a sheep or goat production system.	ANSI 4543 Small Ruminant Production	Students had an average of 4 out of 5 on the grading rubric for this assignment.	No changes made
Students will write up Managerial Standard Operating Procedures (MSOP).	ANSI 4713 Principles of Feedlot Management	100% of the students received a 4 out of 5.	No changes are made at this time.
Students will complete a detailed report of their experiences including any problems they may have encountered.	ANSI 4744 Technical Feedlot Operations	Students that complete the hours designated and turn in the report of their experiences receive a 5 out of 5 on the grading rubric.	Professor will outline in more detail what is expected in the report. A grading rubric will be given to the student as a guide for this report.
Students will produce presentation about themselves for interview, research and write in the Journal of Animal Science, present about a company they are interested in applying to.	ANSI 4862 Animal Science Seminar	For the three major assignments: 1) 95% received a 3 out of 5 Rubric Score 2) 80% received a 3 out of 5 Rubric Score 3) 90% received a 4 out of 5 Rubric Score.	The Professor will develop a more detailed Rubric that will help the students in developing their presentations.

Goal 2- Analytical and Quantitative Reasoning: Read and think critically by analyzing, assimilating, and applying information.			
Student Learning Outcome(s)	**Courses where Assessed**	**Results**	**Changes Made**

Students evaluate and determine the classification and grading of beef and lamb carcasses for wholesale marketing according to the United States Department of Agriculture Standards. Students	ANSI 2182 Meat Evaluation, Classification, and Grading	All Students within the class received one on one instruction and were all able to grade beef and lamb carcasses within 20% of the Instructor's calculations.	No changes were made. This is a hands-on course with calculations necessary for the marketing of the carcasses.
Students are given diagrams on how to cut Pork Primal and Retail Cuts. Then students demonstrate this knowledge by hands-on application.	ANSI 2213 Retail Meat Cutting	75% of students were successful in completing the Primal and Retail cuts of a Pork Carcass.	Evaluating the students work against the standard of The Meat Buyer's Guide.
Students must be successful in Artificially Inseminating three cows at the end of the lab for the course.	ANSI 2442 Artificial Insemination of Farm Animals	95% of all students were able to reach the cervix with the AI gun in three cows on their last lab days.	The requirement to be successful with three cows and the AI gun
Students will be required to not only rank livestock but also calculate the final Yield and Quality Grade for the animals as well as current market price.	ANSI 3442 Livestock Judging and Meat Animal Evaluation	90% of the students were able to attain to the correct Yield and Quality grade. The current market pricing saw only 75% of the students accurate.	More examples will be given to the students and math will be practiced in the simplest forms to encourage the students in their abilities.
Students must successfully harvest one pig by themselves with necessary food safety steps as required by the USDA, Food Safety and Inspection Service.	ANSI 3333 Meats	70% of students were able to complete this harvest by themselves. 20% of the students were helped by fellow students to ensure the proper procedures were followed.	Changes have been made to allow other class mates assist if there are problems.
Complete ration assignments by calculating percentages and ratios of ration for a particular species.	ANSI 3643 Applied Animal Nutrition	65% of the students were able to complete the rations on their own.	Students are receiving more one-on-one time with the Professor. More class time has been devoted to the formulation of rations.
Students will assemble a representative model of the horse and discuss their model and the various bones within the skeleton.	ANSI 3624 Horse Science	95% of the students completed the model and were able to discuss	Better quality of modeling material for the students.

Students present a topic in Anatomy and Physiology.	ANSI 4113 Animal Anatomy and Physiology	75% completed the Power Point with a 70% score from the rubric.	Began in 2015 to allow students to be part of their learning process.
Students will observe and evaluate animals, then dictate oral reasons.	ANSI 4202 Livestock Selection	The students average in oral reasons was 46 out of 50.	Students write out reasons, practice and use their notes.
Students will assess and apply genetic principles to breeding animals.	ANSI 4333 Livestock Breeding and Improvement	The average grade was 20% at 65%, 45% at 74%, 32% at 83%, and 3% at a 92%.	Spend more time explaining a formulation/application and less on theory.
Students analyze the sire indexes to determine which bull they will choose to breed to a select groups of cows.	ANSI 4613 Beef Production and Management	80% were able to attain an average of 4 out of 5. 20% attained an average of 3 out of 5 on the grading rubric.	More scenarios in class discussions concerning all the trait indexes available for different breeds of sires.
Students complete the Pork Quality Assurance (PQA) certification program from the Pork Association.	ANSI 4643 Swine Production and Management	100% of the Students completed the PQA information.	Emphasize that completing the certificate will allow the students to be more marketable.
Students will know the digestive system of ruminant animals.	ANSI 4763 Advanced Ruminant Nutrition	Students have an average of 80% on all tests and assignments.	Include a Grading Rubric in several of the assignments.
Students formulate rations for the life cycle of non-ruminant animals.	ANSI 4773 Advanced Non-Ruminant Nutrition	Students have averaged a 75% out of 100%.	Professor may include a Grading Rubric in several of the assignments.

Goal 3- Social Responsibility and Cultural Awareness: Be an aware and active participant in the global, dynamic community.			
Student Learning Outcome(s)	**Courses where Assessed**	**Results**	**Changes Made**
Students will discuss various breeds of dogs that make good companion animals.	ANSI 3523 Companion Animals	90% of students received a 3 out of 5.	More videos that demonstrate diversity in cultures and their stances on companion animals.
Students will research and report on a Bioterrorism disease as well as an Emerging Disease and explain how this pathogen may be controlled.	ANSI 3743 Animal Diseases	Groups recorded an average of 4 out of 5 on peer reviewed rubrics. 80% of the individuals scored 5 out of 5 on the peer reviewed rubrics.	Presentation with photos, graphs, current Center for Disease Control and World Health Organization data, and one journal article included.

Students will choose a meat dish from a cultural area to prepare and exhibit knowledge of origin of the recipe, type of meat used, and proper food safety and preparation.	ANSI Meat Science 4463	90% of all students will attain at least a 3 out of 5 overall score on the rubrics from the peer audience and the professor	Professor will emphasize on the project's instructions to spend time in the research of the origin and the importance of their chosen meat dish.
Students research a professional journal or research that deals with problems in reproduction in other countries and areas of the world.	ANSI 4433 Animal Reproduction	100% of the students found professional journals and then were able to lead a discussion in class.	Professor goes through process of understanding the vocabulary and emphasized the differences in different areas of the world.
Students will explore the ethical livestock promotion to sell the livestock.	ANSI 4983 Livestock Sales and Marketing	An average of 95% of the students performing at 4 out of 5.	Provide the grading rubric for the students to follow closely for their assignment.

Data Trends

	Year 1	Year 2	Year 3	Year 4
Enrolled	59	71	80	64
Graduated	13	11	24	15
Transferred to Other University (if known)	2		1	1
Employed (if known)	13	11	24	15

Critical Thinking Questions:

1. What are the strengths and opportunities of the program?
   The strengths of the program are the core Animal Science courses that are taught. These courses mirror the larger universities with the same degree.
   Our students are very marketable with their degree within industry, graduate school, and professional schools.

This program has been developing and offering more online courses each year to accommodate students that work full-time or those returning to finish their degrees.

2. What are the weaknesses of the program?
   The weaknesses of the program include the large number of different courses that each faculty must teach.
   One weakness is that many courses are not sequential and this needs to be improved.
   A low number of qualified faculties to teach these courses are one of the largest weaknesses.

3. How is the program marketed? Is the marketing effective?
   We have the program marketed within the university marketing and recruitment.
   The faculty members do recruit with regional junior colleges and high schools.
   We have judging teams and equestrian team within the program that are seen at the national level.
   The marketing could be strengthened because we have a very effective program and it needs to be marketed more regionally.

4. How does this program meet social, cultural, technological, scientific, and economic needs in the world?
   We are in the center of the most productive agricultural area within the United States. Many of the area agricultural products are exported world-wide.
   When the students go to work within these companies, they are contributing to the technological, scientific, and economic needs of the world.
   The social and cultural needs in the world are not being meet by our program. I would like to have Study Abroad and also over- seas trips for specific courses and trainings.

5. Does the program have low enrollment courses? Should they continue to be offered? Why or why not?
   Upper level courses such as Animal Science Problems and Industry Internship is usually a lower number. These courses are necessary for students to gain credit for their industry work. These courses should be continued.

6. In courses with DFW rates of higher than 20%, what challenges are there for the students? What changes can be made to improve the DFW rate?
   One course may have a DFW rate of higher than 20%. In Animal Science, a minimum of a "C" is required for the student to pass the course. If the student makes a "D" or lower, they are required to retake the course. All of the Animal Science faculty are on the observing students that are becoming borderline. We do talk to the students while they are still in the class. Many students will just quit or refuse to discuss their low grade with the professors. In Fall 2018, with the new resources to identify struggling students through the Academic Resource Center, more students will be helped earlier in their courses.

7. Is the benchmark for non-major students taking courses in this program assessed appropriately?
   Yes, there are very few non-major students taking the courses within this program. All students are assessed in the same manner.

8. How is student feedback informing program or course changes?
   Student feedback is very critical and is listened to for program and course changes. We have continued an Equine Option with three Equine courses because of the number of students wishing to have that Option. We did add a Companion Animal course for students that expressed an interest in veterinary medicine.

9. What are the qualifications of the program faculty for teaching in this program?
   The qualifications for the program faculty include at least a Master degree in Animal Science to teach lower level courses. All upper level courses need to have a Ph.D. in Animal Science or closely related degree (such as Equine, Nutrition, Food Science, Meat Science, etc.).

10. How are teaching assignments determined?
    Teaching assignments are determined by the professors' degree and their experience and interest.

11. How are adjunct faculty supported and mentored?

Adjunct faculty are invited to all trainings at the beginning of each semester. They are on the email list for all faculties to receive   information from the university on material and upcoming workshops. I personally encourage the adjuncts to continue their education with conferences and workshops that pertain to their specific course.

12. What are the significant accomplishments this program has? How can more be encouraged?
    This program has graduated many accomplished students. There have many who completed Masters degrees and Ph.D. degrees. The program has sent many students into successful careers within the Animal Science industries. For the last five years we have had at least one student be accepted into veterinary school and complete their Doctor of Veterinary Medicine degrees.

13. What resources are needed by this program to assist in improving student learning? i.e. library, information technology resources, services, etc.
    More IT equipment that can be used on a large group of students in one classroom would be beneficial.

Proposed Student Learning Outcomes for the next Cycle:

	Goal 1- Oral and Written Communication: Communicate effectively using written, oral, and symbolic languages.	**Goal 2**- Analytical and Quantitative Reasoning: Read and think critically by analyzing, assimilating, and applying information.	**Goal 3**- Social Responsibility and Cultural Awareness: Be an aware and active participant in the global, dynamic community.
Student Learning Objective(s)	Write technical reports over the subject matter. Prepare presentations to be made according to the course material.	Students will navigate through basic math skills such as percentages, ratios, and usage of money.	Students will understand Agriculture people in the world.
Courses where Assessed	All need to be assessed	All need to be assessed	All need to be assessed
Benchmark	Benchmark may be either 3 out of 5 on Rubric; 40 out of 50 on scoring; and 75% out of 100% on assessments and assignments	Benchmark may be either 3 out of 5 on Rubric; 40 out of 50 on scoring; and 75% out of 100% on assessments and assignments	Benchmark may be either 3 out of 5 on Rubric; 40 out of 50 on scoring; and 75% out of 100% on assessments and assignments

Program Review Recommendations

The recommendation is to continue the program at its current level. Benchmarks have been met with reasonable success by the program, and new redefined student learning objectives will assist in easier tracking of data.