Program Assessment Report
DBCALFS ANSC BS Program
University of Arkansas
Academic Year 2021-2022

1. **Animal Science Department, B111 AFLS, 575-3745**

2. **Department Mission:**

   The Department of Animal Science shall be a leading authority of animal agriculture by means of innovative research, teaching and extension programs for all Arkansans and the world.

3. **Program Goals:** The Department of Animal Science will 1) perform research from discovery to application that benefits the production efficiency, animal health/well-being, food safety/security, and sustainability of animal agriculture, **2) recruit, educate, and prepare for the future, a new generation of citizens that will provide expertise in food production, animal health/well-being, as well as human health and nutrition,** and 3) provide research-based livestock and forage information through non-formal educational methods for the sustainability and management of agricultural production systems to improve Arkansans quality of life.

4. **Student Learning Outcome #1**
   Students will demonstrate an understanding of scientific knowledge and gain a basic foundation in the general animal sciences, including physiology, genetics, nutrition, muscle foods, as well as demonstrate production management skills.

   A. Assessment Measure 1 – Direct
      - An assessment was conducted for seniors graduating in the fall of 2021 and the spring of 2022.
      - An assessment tool was developed by the student assessment committee from questions that were created by the ANSC faculty (used for the 1st time in 2016, modified in spring 2018). Twenty-eight survey questions were created in 2016 and modified in 2019. The 58-question assessment instrument and the 28-question survey were transitioned from hard copy to an online version utilizing Microsoft Forms in 2021. In November of 2021 and March of 2022, outgoing seniors were invited via e-mail invitation to participate in the Senior Assessment Exam and the Senior Survey. Those seniors who did not complete the Senior Assessment Exam and Senior Survey were reminded again in December 2021 and April 2022 to participate. Of the of 72 names of Fall 2021 and Spring 2022 graduating students in ANSC provided by the Dean's office, 20 (28%) completed the Senior Assessment Exam and Senior Survey. Of respondents, 4 self-identified as male; 16 self-identified as female, 19 self-identified as Caucasian, and 1 self-identified as African American. Seventeen students reported that they were considered 'in-state' and 3 reported they were 'out-of-state' for tuition purposes.
      - The target score for the Senior Assessment Exam, as determined by the departmental committee was there would be 70% of graduating seniors who scored 'average' or above. If average is set at 70% on the assessment, then 75% of the seniors who took the

assessment met this goal. Thus, this reaches the acceptable level as determined by the department.

- In the chart below, aggregate scores for graduating seniors who completed the senior assessment, and the senior survey for the past three years are reported.

2020 Senior, % correct (*n* = 40)	**2021 Senior, % correct (*n*=18)**	**2022 Seniors, % correct (*n*=20)**
69.31 20 students (50%) had >70% correct	76.0 13 students (72%) had > 70% correct	75.25 15 students (75%) had > 70% correct

- Furthermore, 10 of 12 students (83%) with a pre-professional concentration had > 70% correct and 6 of 9 students (66%) with a general ANSC concentration had > 70% correct.

- The 58-question Senior Assessment Exam was further broken down into areas of competency deemed important by the Departmental Assessment Committee. Results from the past two years are seen below:

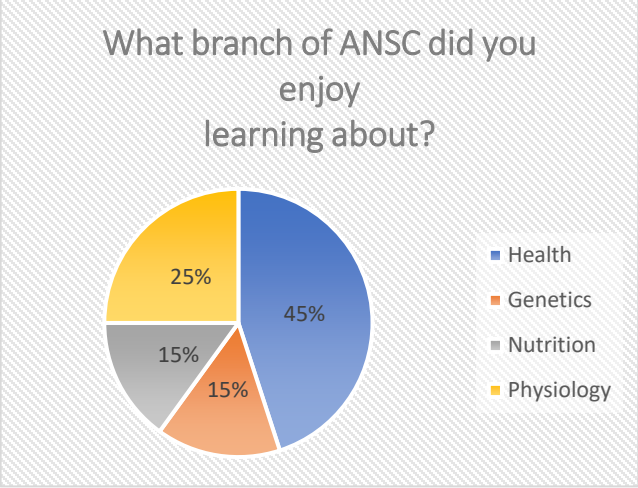
Area of Competence	**Number of questions**	**2021 Average Percent correct (n=18)**	**2022 Average Percent correct (n=20)**
Physiology	13	73%	72%
Genetics	11	74%	72%
Nutrition	12	79%	73%
Muscle Products	10	71%	77%
Production Management	12	76%	78%

In summary:

- The rigor of the assessment and the appropriate metric for 'acceptable' requires continued discussion within the department. While 2021 was a non-traditional year due to COVID and there was a limited number of graduating seniors who completed the assessment, the results obtained from the Fall 2021 and Spring 2022 Senior Assessment Exam appear consistent with the results obtained during the 2020-2021 cycle. Therefore, it appears that the assessment tool we are using is providing consistent results.
- There were 4 questions on the assessment instrument that were incorrectly answered at a frequency of >50% by the seniors. These questions were distributed throughout the disciplines (1 physiology, 1 meat science and 2 genetics); they were not concentrated within any single discipline. These questions will be discussed with faculty who teach in these areas to determine if the question needs to be reworded or if the concept the question addresses needs additional clarification when presented to students.

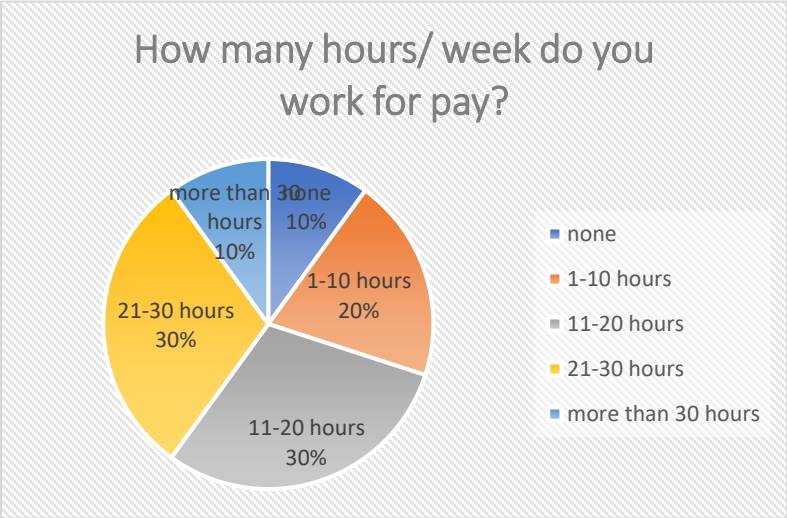
B. Assessment Measure 2 - Indirect

- A 28-question Senior Survey was developed by the assessment committee. This survey was administered to outgoing seniors concurrently with the Senior Assessment Exam described above.
- Of the 72 names of Fall 2021 and Spring 2022 graduating students in ANSC provided by the Dean's office, 20 (28%) completed the Senior Assessment Exam Senior Survey.
- An invitation to have an Exit Interview with the Department Head was also extended to all seniors scheduled to graduate in the Fall of 2021 and Spring of 2022.
- Senior Survey results and demographics follow:
    - 11 of the respondents (55%) reported they had an urban background while 9 (45%) reported they had a rural background.
    - 9 (45%) were General ANSC while 11 (55%) were Pre-professional
    - 16 (80%) identified as female and 4 (20%) identified as male
    - 19 (95%) identified as Caucasian, 1 (5%) identified as African American
    - 3 (15%) respondents reported they came to the U of A from another state, while 17 (85%) reported they were from Arkansas
    - When asked what type of animals' respondents hoped to work with after graduation, 6 (30%) answered companion animals, 6 (30%) answered livestock, 6 (30%) answered mixed, and 2 (10%) answered other.
- Due to COVID, many courses were taught online during the fall of 2021. One concern of faculty was student satisfaction with departmental preparedness of graduating seniors and satisfaction of studying various content areas in ANSC. Of respondents, 18 (90%) reported that the ANSC Dept. did a good job of increasing awareness of careers in ANSC.
- Most respondents pursuing an ANSC degree indicated that most enjoyed learning about animal health.



- Students were asked how necessary it was that they worked while attending school. Of respondents:
    - 3 (15%) reported that it was unnecessary
    - 13 (65%) reported that it was unnecessary to work but they liked the extra spending money
    - 4 (20%) reported that it was necessary for them to have a job while they attended the university

- In an effort to understand how many hours/ week respondents worked and volunteered, the following information was gathered:



- Finally, upon returning the assessment and survey instruments students were given an invitation to set up an appointment with Dr. Looper, the Department Head, for an exit interview. The Department Head of Animal Science conducted exit interviews with graduating seniors. This is a summary of seven (of 48 students that applied for graduation through the Dean's office; 15% of spring graduating seniors are represented in the comments below) vis-à-vis interviews.
    - Students continue to 'find' Animal Science via family members attending the UA, visiting campus during a youth event (e.g., 4-H O'Rama, judging camp, equine show, etc.), or transferred in from other degree programs, typically Biological Sciences. Virtually all graduating seniors were complimentary of the quality of advising and instruction in the Department of Animal Science, and the availability of faculty and one-on-one care for students.

- The interviews showed that most students approved of overall quality of instruction, curricula design (they were aware of some curriculum changes the Department made in August 2019 that are now being implemented), staff interactions, and student satisfaction. Co-instruction of courses was again mentioned by a few of the students and was not considered ideal; better communication between instructors was suggested. Three students began in Honors but left the program in year 2 or 3. One comment was their Honors advisor was not timely in their response to student's question. When ask "what is the expectation to receive a response to an email, students mentioned 3 days to one week unless an emergency, then that day."
- Students still appreciate courses and activities where they get 'hands on' experience with livestock or in the laboratory; comment that sheep were used too much in Animal Handling. Some 'favorite' courses mentioned were: Animal Behavior, Research Proposal Development, and Intro to Horsemanship. Some difficult and/or 'not favorite' courses included Parasitology (the 3 instructors argued amongst the group and grading was considered extremely subjective) and Companion Animal Nutrition (specifically the co-teaching model in this course was not appreciated). Specific suggestions include offering Comparative Veterinary Anatomy earlier (maybe drop to 3000 level course) and to make meat science a core course for pre-professional students (comment was "it's a nice complement to Comparative Veterinary Anatomy course").
- No students I visited with took advantage of the study abroad/international experiences. Students' main reasons for not participating was time, finances, and pandemic restrictions. Club membership was discussed but a majority of students did not actively participate in clubs within and/or outside of Animal Science.
- Students interviewed had a variety of employment options including graduate school (here and out-of-state) as well as acceptance to veterinarian medicine school.

5. Student Learning Outcome #2:

Students will possess problem solving skills.

A. Assessment Measure 3 – Direct

- Rubric for **problem solving** skills (a scale of 1 to 4, with 1 = Benchmark and 4 = Capstone) is on file with appropriate course instructors.
- This Student Leaning Outcome was assessed in for 2021 graduating seniors and is not assessed this cycle.

6. Student Learning Outcome #3:

Students will possess critical thinking skills and objectively make decisions about contemporary issues based upon scientific facts rather than emotion.

B. Assessment Measure 4 – Direct

- A rubric for **critical thinking** skills (a scale of 1 to 4, with 1 = Benchmark and 4 = Capstone) was developed and distributed to appropriate course instructors. This critical thinking rubric is within the Written and Oral Presentation rubrics.
- Rubric was used to assess graduating seniors in ANSC senior level courses.
- Results: Scores for this rubric were returned by 1 faculty (for 1 course)

Course	Number of Seniors	Mean Score	% students receiving a score of:			
			4	3	2	1
ANSC 4252*	15	3.53	53%	47%	0%	0%
ANSC 4252**	5	3.40	40%	60%	0%	0%
Total	**20**	**3.50**	**50%**	**50%**	**0%**	**0%**

*Note: *Indicates seniors who graduated in the spring; **Indicates seniors who graduated in the fall*

- **In summary:**
  - The target for the Department was that 70% of graduating seniors would score an average or above. In 2022, 100% of the students assessed with the rubric scored 3 or above, therefore the departmental goal was met.

7. **Student Learning Outcome #4.**
Students will demonstrate basic oral (Outcome 4a) and written (Outcome 4b) communication skills and demonstrate the ability to write and present information in a professional manner.

A. Assessment Measure 5 - Direct
- A rubric has been created to assess **oral communication** skills. It contains 6 performance areas with a 1 to 4 scale within each of those areas.
- Rubric was used to assess graduating seniors in ANSC senior level courses.
- Results: Scores for this rubric were returned by 1 faculty (for 1 course).

Course	Number of Seniors	Mean Score	% students receiving a score of:			
			4	3	2	1
ANSC 4252*	15	3.51	0%	87%	13%	0%
ANSC 4252**	5	3.34	0%	100%	0%	0%
Total	**20**	**3.46**	**0%**	**90%**	**10%**	**0%**

*Note: *Indicates seniors who graduated in the spring; **Indicates seniors who graduated in the fall*

- **In summary:**
  - The target for the Department was that 70% of graduating seniors would score an 'average' or above. In 2022, 90% of the students assessed with the rubric thus met this goal.

B. Assessment Measure 6 – Direct
- A rubric has been created to assess **written communication** skills. It contains 6 performance areas with a 1 to 4 scale within each of those areas.
- This Student Leaning Outcome was assessed in for 2021 graduating seniors and was not assessed this cycle.

8. Overall Recommendations

There were greater than 70% of the seniors who were rated acceptable in critical thinking and oral communication skills based on the rubrics developed by the Assessment Committee. It remains a challenge to gather this data from the ANSC senior courses. All senior level Animal Science production courses probably have projects or assignments where some or

all of these rubrics could be used; however, it was difficult for some instructors to incorporate them into a course. A common problem is that the course uses team projects vs. individual student's work for these type projects. Another issue is that ANSC majors often do not take these 4000 level courses only in their senior year. They commonly take them as juniors. In this report, the scores only include those students graduating in December 2021 and May 2022. We are missing a number of observations because of how we use these rubrics. The implementation of the required capstone course in 2022 will serve as a way to collect this information.

- Information pertaining to acceptance rates for Fall 2021/ Spring 2022 graduating seniors into professional schools and graduate programs was collected by a departmental representative. Reported below is the current information (as of May 16, 2022) which will change as students continue to receive notifications. Of 27 students in the ANSC Dept who were known to apply to Professional Schools, 5 (18.5%) were denied admittance, 5 (18.5%) have not reported and 17 (63%) have been accepted.

9. Action Plan

a. At a teaching retreat in May 2019 a plan to add a senior capstone course to the department's curriculum was developed. A single senior capstone course, required for graduation, would enhance our ability to collect the necessary data for the assessment report. This course has been implemented into the ANSC curriculum and is scheduled to start in 2022.
b. The ANSC Assessment Committee is working closely with the Dean's office to track post-graduation plans for the graduating seniors. This should result in a more complete picture of student plans post-graduation.
c. ANSC faculty will be sent aggregate results of the Senior Assessment Exam annually to make adjustments, inform instruction, and fill in gaps so students have a clear idea of concepts.
d. There were 4 questions on the assessment instrument that were incorrectly answered at a frequency of >50% by the seniors for the past two assessment cycles. These questions were distributed throughout the disciplines (1 physiology, 1 meat science and 2 genetics); they were not concentrated within any single discipline. These questions will be discussed with faculty who teach in these areas to determine if the question needs to be reworded or if the concept the question addresses needs additional clarification when presented to students. .
e. Suggestions by the departmental Assessment Committee to improve upon the information captured in the senior surveys given to the seniors will result in an update to our senior survey and will be implemented in the fall of 2022. Questions that will be included in the survey follow:
    i. How well did you achieve each of the following departmental learning goals? We will simply rewrite as learning objectives and have students' self-rate.
    ii. What aspects of your education in this department helped you with your learning and why were they helpful?
    iii. What might the department do differently that would help you learn more effectively, and why would these actions help you? (We currently get to this in a

round-about way. We just need to rewrite question.)

iv. In the area of competence portion, include another column allowing students to rate their perceived competence level as freshman – then we can see their perceived growth in each area and get another data point. As an example:

	Area of Competence	Score (1-5) Rate your general competence in this area **BEFORE** you started at the University	Score (1-5) Rate your general competence in this area **NOW**, as a graduating senior
1	Physiology		
2	Genetics		
3	Nutrition		
4	Muscle products		
5	Production and Management		