

Annual Academic Assessment Report

(BS/POULTRY SCIENCE)

(May 14, 2021)

Report annually to the Dean of the college/school the following:

1. Results of analysis of assessment of Student Learning Outcome

Assessment Measure 1. Students will demonstrate knowledge of the basic principles of production, anatomy, physiology, genetics, nutrition, health, and disease identification as related to poultry.

Pre-test/Post-test: Initially, this measure was assessed in the fall of 2017 in POSC 1002 Introduction to Poultry Careers. The average was 29%. The post-test was administered in POSC 4343 Poultry Nutrition spring of 2021 and the average was 72.5%. The post-test showed significant growth amongst students between fall 2017 and spring of 2021. The pre-test was administered in fall of 2020 with the average being 55.8 %. The post-test analysis will be available spring of 2024.

Table 1. Senior Exit Survey: Student Self-Assessment of Core Competencies

1. Curriculum Areas

Curriculum Competence Areas							
Semester	Anatomy & Physiology	Genetics	Nutrition	Meat Bird Production	Animal Welfare	Poultry Processing	Food Safety
Fall 2020 ¹	3.5	3.25	3.5	3.75	4.25	4	3.25
Spring 2021 ²	3.875	3.25	3.625	4.25	3.875	3.875	3.875
Mean	3.69	3.25	3.56	4	4.06	3.94	3.56

¹n=4 respondents

²n=8 respondents

Scale: 1=does not meet expectations

2=needs improvement

3=meets expectations

4=above average
5=exceeds expectations

Summary and Conclusions: Self-assessment by recent graduates receiving a B.S. in Poultry Science from our department ranked their competency in these seven curriculum emphasis areas as “meets expectations” or greater.

- The lowest ranking is in the discipline of Genetics with a 3.25 ranking for both Fall 2020 and Spring 2021 semesters. This is surprising considering our students take at least two independent courses focusing upon genetics (Principles of Genetics and Poultry Breeding). Even though this ranking falls in the “meets expectations” range, it may be wise to assess the materials and approach to instruction in this course, if it continues to consistently rank lowest among our seven curriculum emphasis areas.
- Two curriculum emphasis areas that ranked “above average” for our recent graduates were Meat Bird Production and Animal Welfare. This reflects our undergraduate curriculum offering three independent courses in live production of poultry (Poultry Production, Poultry Breeder Management, and Integrated Poultry Management Systems).

Table 2. Senior Exit Survey: Student Self-Assessment of Core Competencies

2. Interpersonal and Communication Skills

Competence Area	Fall 2020	Spring 2021	Average
Technical Competency	3.25	3.875	3.56
Environmental Awareness	3.75	3.875	3.81
Ethical Responsibility	4.25	4.375	4.31
Leadership Ability	4.25	4.75	4.5
Oral Communication	4.25	4.625	4.44
Written Communication	4.25	4.375	4.31
Critical Thinking / Problem Solving	4.25	4.125	4.19
Basic / Applied Research Understanding	4	4	4
Creativity	4	4.375	4.19
Writing / Presenting Scientific Information	3.75	3.625	3.69

¹n=4 respondents

²n=8 respondents

Scale: 1=does not meet expectations
 2=needs improvement
 3=meets expectations
 4=above average
 5=exceeds expectations

Summary and Conclusions: Self-assessment by recent graduates receiving a B.S. in Poultry Science from our department ranked their competency in these 10 interpersonal or communication skills as “above average”, except for Technical Competency, Environmental Awareness, and Writing/Presenting Scientific Information.

- The lower rankings for Technical Competency and Writing/Presenting Scientific Information are surprising, since not all our students engage in research opportunities as undergraduates. With the creation of our new course POSC 402V Undergraduate Research. This new offering should provide additional opportunities for our undergraduates to get experience with formal research projects.

Assessment Measure 2: Students develop critical-thinking skills that apply to issues and problems faced by the poultry industry.

Table 2. Integrated Poultry Management Systems—Capstone (POSC 4213 & 5213): Spring, 2021

Assessment rubrics: the semester ending capstone project, which integrates all course objectives into on final comprehensive project for each student, were assessed using POSC assessment rubrics for undergraduate oral presentations and undergraduate written papers.

Capstone Oral Presentations

Student	Presentation Quality	Presentation Breadth	Response to Questions	Overall
1	3	3	3	3
2	2	2	2	2
3	3	3	3	3
4	3	3	3	3
5	2	2	2	2
6	3	3	3	3
7	3	3	3	3

8	3	3	3	3
9	2	2	2	2
10	2	2	2	2
11	3	3	2	3
12	2	3	2	2
13	3	3	3	3
14	2	2	2	2
15	2	3	3	2
Mean:	2.53	2.67	2.53	2.53

Scale: 1=Does not meet expectations; 2=meets expectations; 3=exceeds expectations

Capstone Written Essay

Student	Essay Quality	Essay Quality and Style	Overall
1	3	3	3
2	2	2	2
3	3	3	3
4	3	3	3
5	2	2	2
6	3	3	3
7	3	3	3
8	3	3	3
9	2	2	2
10	2	2	2
11	3	3	3
12	2	3	2

13	3	3	3
14	2	2	2
15	2	3	2
Mean:	2.53	2.67	2.53

Scale: 1=Does not meet expectations; 2=meets expectations; 3=exceeds expectations

Summary and Conclusions

Mean rankings from the chosen rubrics for both individual student oral presentations and writing assignment for semester ending capstone projects in the Spring 2021 semester ranged between “meets expectations” and “exceeds expectations” categories (means exceeding 2.5 on a scale of 3 in all categories). These observations are very positive and indicated our students were well prepared to respond to the challenges of these capstone projects.

Assessment Measure 3: Students will be able to communicate summaries of lab activities, interpret results of problem-solving activities and summarize results of research in written and oral communication.

POSC 4821 Seminar-Problem Solving (Spring 2021)

Module 3: Problem Solving & Communication on the Farm (Contract Producer / Service Tech)

1. **Objective:** Problem solving and communication involving potentially difficult dialogue. Students will be placed by Dr. Caldwell to groups of 4 students. Each group will be presented a management related problem in the commercial live production environment that will require representatives of the production company (service tech) to implement solutions with the contract producer (family farmer). This problem was conceived and delivered to each group by an industry representative (live production manager) of a broiler integrator in NWA. On occasions, difficult dialogue resulted when the contract producer was asked to implement solutions to the observed problem that are either contradictory to normal operating procedures or require significant financial investment. In addition to problem solving, each group engaged in role play for either company personnel and/or family farmers (poultry growers). **Deliverables:** 1) Each group had individual members engage in difficult dialogue while role playing company personnel (e.g. broiler or breeder service techs) engaged in discussions with family farmers (growers) related to relevant issues currently facing the industry (house equipment, annual grower contracts, following biosecurity protocols, and other relevant SOPs); and 2) each student submitted a one-page written overview of the discussions from both perspectives. **Assessment rubrics:** for this module, POSC assessment rubrics for problem solving, oral communication, and written

communication will be used.

Problem Solving Rubric

	Define Problem	ID Strategies	Provide Solutions	Evaluate Solutions	Implement Solutions	Evaluate Outcomes
Group 1	3	3	3	3	3	4
Group 2	3	2	3	2	2	2
Mean	3	2.5	3	2.5	2.5	3

Scale: 1=Benchmark; 2=Milestones (low); 3=Milestones (high); and 4=Capstone

Oral Communication Rubric

	Organization	Language	Delivery	Supporting Materials	Central Message
Group 1	2	3	2	3	3
Group 2	2	3	2	2	2
Mean	2	3	2	2.5	2.5

Scale: 1=Benchmark; 2=Milestones (low); 3=Milestones (high); and 4=Capstone

Written Communication Rubric

Student	Context and Purpose	Content Development	Genre	Sources and Evidence	Syntax and Mechanics
1	3	3	3	3	3
2	3	4	3	4	3
3	3	4	3	4	3
4	3	3	3	3	3
5	3	2	2	3	2

6	2	3	3	1	2
7	2	2	2	2	2
8	2	3	2	3	2
Mean	2.625	3	2.625	2.875	2.5

Scale: 1=Benchmark; 2=Milestones (low); 3=Milestones (high); and 4=Capstone

Table 3. POSC 4821 Seminar-Problem Solving (Spring 2021)

Module 4: Problem Solving & Communication on the Farm (Service Tech and Veterinarian)

2. **Objective:** Problem solving, and communication related to health-related performance reductions in the commercial live production environment. Students will be placed by Dr. Caldwell to groups of 4 students. Each group was presented a health-related problem that had elements of both pathogen challenge and management in the commercial live production environment. This problem was conceived and delivered to each group by an industry representative (commercial veterinarian) based in NWA. This problem required representatives of the production company (service tech) to solve the problem and recommend solutions to the company veterinarian and live production manager.
Deliverables: 1) Each group presented a detailed assessment of the specific problem, identify potential causes or etiologies, recommend solutions to the company veterinarian and live production manager, implement these solutions, and assess the effectiveness of the proposed solutions; and 2) each student submitted a one-page written overview of the module.

Assessment rubrics: for this module, POSC assessment rubrics for problem solving, oral communication, and written communication was used.

Problem Solving Rubric

	Define Problem	ID Strategies	Provide Solutions	Evaluate Solutions	Implement Solutions	Evaluate Outcomes
Group 1	3	3	3	3	3	4
Group 2	3	2	3	2	2	2
Mean	3	2.5	3	2.5	2.5	3

Scale: 1=Benchmark; 2=Milestones (low); 3=Milestones (high); and 4=Capstone

Oral Communication Rubric

	Organization	Language	Delivery	Supporting Materials	Central Message
Group 1	2	3	2	3	3
Group 2	2	3	2	2	2
Mean	2	3	2	2.5	2.5

Scale: 1=Benchmark; 2=Milestones (low); 3=Milestones (high); and 4=Capstone

Written Communication Rubric

Student	Context and Purpose	Content Development	Genre	Sources and Evidence	Syntax and Mechanics
1	3	3	3	3	3
2	3	4	3	4	3
3	3	4	3	4	3
4	3	3	3	3	3
5	3	2	2	3	2
6	2	3	3	1	2
7	2	2	2	2	2
8	2	3	2	3	2
Mean	2.625	3	2.625	2.875	2.5

Scale: 1=Benchmark; 2=Milestones (low); 3=Milestones (high); and 4=Capstone

Summary and Conclusions

Mean rankings from the chosen rubrics for both group oral presentations, group problem solving, and individual writing assignment for both problem-solving modules that were evaluated in the Spring 2021 semester ranged between “milestones (low)” and “milestones (high)” categories. We did not observe a single category on any rubric with a mean in the “Capstone” category. In subsequent semesters, we will commit additional time and resources into the contents of this course to improve rankings. We should strive to achieve rankings that

range between “milestones (high)” and “capstone” categories, as this is the goal for this course which stresses problem solving, communication, and critical thinking.

2. Any changes to degree/certificate planned or made on the basis of the assessment and analysis

The 2020-2021 academic year the Department of Poultry Science embarked upon a detailed review of the undergraduate curriculum. The department added an undergraduate industry track and preprofessional science track option to better serve students which will take effect in Fall 2021. Lastly, POSC 402V Undergraduate Research was added to the curriculum, effective Fall 2021. This new offering should provide additional opportunities for our undergraduates to get experience with formal research projects.

3. Any changes to the assessment process made or planned.

- The pre-test and post-test were updated. In addition, the senior exit survey was changed to reflect core competencies. No further changes with the pre/post-test or senior exit survey this year.
- It was noted in the senior exit survey: The lower ranking for environmental awareness may indicate the need to assess our curriculum for content in this area.
- It was noted in the senior exit survey in the area of genetics: even though the ranking fell in the “meets expectations” range, it may be wise to assess the materials and approach to instruction in this course, if it continues to consistently rank lowest among our seven curriculum emphasis areas.