Program Assessment Plan
(Poultry Science-Undergraduate Program)
University of Arkansas
May 2018

1. **Department Name & Contact Information**
    - **Department of Poultry Science**
    - **1260 West Maple Street**
    - **Fayetteville, AR 72704**
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    - **Patrice N. Sims, patrices@uark.edu**

2. **Department Mission**

    The Center of Excellence for Poultry Science shall provide comprehensive programs in research, teaching, and extension dedicated to improving the lives of Arkansans associated with all components of the poultry industry by generating knowledge through research and putting that knowledge to use through education.

3. **Program Goals**

    The goal of the poultry science curriculum is to promote a fundamental understanding of poultry science across sub-disciplines, with an emphasis on the scientific basis underlying the poultry industry. The objective of the required POSC courses is to provide an overview of poultry-related careers, production practices, poultry anatomy, and disciplines that include physiology, diseases, genetics, nutrition, processing, and products.

4. **Student Learning Outcome 1.** Students will demonstrate knowledge of the basic principles of production, anatomy, physiology, genetics, nutrition, health, and disease identification as related to poultry.

The following items apply to EACH Assessment Measure.

A. Poultry Pre and Post Assessment Test.

- POSC has established a pre and posttest that will be administered the freshmen year in POSC 1002 Introduction to Careers in Poultry Science and again in the senior year in POSC 4343 Poultry Nutrition.
- The test includes questions from required poultry core courses: Poultry Nutrition 4343, Avian Anatomy 3554, Poultry Diseases 3323, Egg and Meat Technology 4314, Poultry Production 2343, and Poultry Breeder Management 2353.
- A pre/posttest was established for POSC 4213.
- The pretest and the posttest will be scored separately.

- The pre/posttest is a direct measure.

POSC Exit Survey

- The Poultry Science Exit Survey is given during the senior year.
- The survey is an indirect measure.

B. Acceptable and **Ideal Targets** (not required for indirect measures).

- It is likely that the freshmen class will fare poorly on the pretest. We would expect an average score for the pretest to be less than or equal to 55%. We would expect an average score for the posttest to be greater than or equal to 76%.
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C. Key Personnel (Department Head, Faculty, Department Administrative Manager).

- Mike Kidd-department head, the class instructor, and Patrice Sims-department administrative manager
    -

D. Summary of Findings.

- As students matriculate through the program they will take the poultry science core classes.
- The test was administered fall 2017 in Intro to Poultry Careers to 50 students. The average score for the pretest was 29%. The first post-test will be administered fall 2020 and will be available fall of 2021. It is expected that students will fare poorly on the pretest. The posttest would show significant improvement. The students will gain this knowledge from the poultry science core courses. We would expect an average score for the posttest to be greater than or equal to 76%.
- A pre/posttest was administrated in spring 2018 to students enrolled in POSC 4213. The average score was 36%. The low was 12%. The high was 68%. Twenty-five percent of the class made 25% or below. Thirty-Three percent of the class made below 25%.
- The post-test average for POSC 4213 was 58%. The low was 16%. The high was 80%. Eleven percent of the class made a 75% or higher. Fifty-Six percent of the class made a 70% or higher. Sixty-seven percent of the class made a 50% or higher. Twenty-two percent of the class scored below the 25% mark.

E. Recommendations (not required for indirect measures)

For AY 2018-2019 POSC will implement a pre-test in POSC 1002, a mid-test in POSC 3554 and a post-test in POSC 4343.

5. Student Learning Outcome 2. Students develop critical-thinking skills that apply to issues and problems faced by the poultry industry.

Student Learning Outcome 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 (Learning Outcome two & three are using rubrics as the direct measure)

The following items apply to EACH Assessment Measure.

A. Rubrics for POSC Seminar Courses

- POSC has established rubric to be used in the seminar courses: POSC 4801 Seminar: Research Topics: POSC 4811 Seminar Professionalism; POSC 4821 Problem Solving; and POSC 4831 Processing Regulations
- The Rubric is a direct measure.
- Two rubrics: oral communications, and written communication will be used in the seminar courses.
- POSC 4801: aim is to help undergraduate students assimilate the fundamentals of understanding research source value and how to read, understand orally present quality referred research publications.
- POSC 4811: address issues associated with preparation for finding and retaining your first job in the poultry industry.
- POSC 4821: real world problem solving of poultry production systems.
- POSC 4831: processing plant procedures and regulations with an emphasis on problem solving.

B. Acceptable and **Ideal Targets** (not required for indirect measures).

- The seminar course is taken during the junior or senior year; preferably the senior year. It is expected that 80% of the class will meet expectations 10% will exceed expectations and 5% will not meet the expectations.
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C. Key Personnel (Department Head, Faculty, Department Administrative Manager).

- Mike Kidd-department head, the class instructor, and Patrice Sims-department administrative manager
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D. Summary of Findings.

- The seminar courses consist of several oral presentations, written presentations, team building exercises as well as problem solving activities. Students would have gained the prerequisite skills for oral presentations and written presentations from previous poultry sciences courses and university core courses. The criteria set forth in the rubric will be explained for the assignments. Students at this level should be able to meet or exceed the criteria of the rubric.
- POSC 4821 was assessed on two oral presentations. The class exceeded standards.
-

E. Recommendations (not required for indirect measures)

- Currently, we do not have any recommendations.
-
-

6. Overall Recommendations

A mid-test will be implemented for POSC 3554

7. Action Plan

No action plan at this time.

8. Supporting Attachments

- Pretest and Posttest
- Graduate Survey
- Oral Presentation Rubric
- Written Communication Rubric

Undergraduate Oral Presentation:

Presented by: Seminar: Problem Solving / POSC 4821 spring, 2018

Rubric – Completed by: Michael T. Kidd, Professor & Department Head **Date:** 30 April 2018

(To be completed by instructor. Please indicate any category not relevant to presentation)

Attribute for ORAL	Does Not Meet Expectations *Provide a short explanation for each attribute That you select in this category.*		Meets Expectations		Exceeds Expectations	
Overall quality of presentation		Poorly organized Poor presentation Slides and handouts difficult to read Poor communication skills	4 2 1	Clearly organized Clear presentation Good communication skills Slides and handouts clear	3 3 3	Well organized Professional presentation Excellent communication skills Slides and handouts outstanding
Overall breadth of knowledge		Presentation unacceptable Presentation reveals critical weakness In depth of knowledge in subject matter Presentation does not reflect well developed critical thinking skills Presentation is narrow in scope No application to Poultry Science	1 1 1 1	Presentation acceptable Presentation reveals some depth of knowledge in subject matter Presentation reveals above average critical thinking skills Presentation reveals the draw from knowledge in several disciplines Application to Poultry Science evident	2 1 6 2 3	Presentation superior Presentation reveals exceptional depth of subject knowledge Presentation reveals well developed critical thinking skills Presentation reveals the ability to interconnect and extend knowledge from multiple disciplines Presentation shows clear application to Poultry Science
Quality of response to questions		Responses are incomplete or required prompting Arguments are poorly presented Respondent exhibits lack of knowledge in subject area Responses do not meet level expected of B.S. degree Student does not realize the connection presented work to poultry science	3 2	Responses are complete Arguments are well organized Respondent exhibits adequate knowledge in subject area Response meet level expected of B.S. degree Student adequately connects presented work to poultry science	2 9	Responses are eloquent Arguments are skillfully presented Respondent exhibits superior knowledge in subject area Responses exceed level expected of B.S. degree Student is able to discuss in depth the connection of thesis research to poultry science
Overall assessment		Does not meet expectations		Meets Expectations	X	Exceeds Expectations

Rubrics were assessed from two (2) oral team presentations. 1) Presentations consisted of four debates (2 teams per topic and 8 total teams). 2) Presentations utilized existing teams in eight groups to construct a broiler complex (vertical integration) for a given poultry complex. Five to six students were in each team and the two team presentations consisted of 0.80 of the grade, combined. Hence, 16 rubrics were established.

Undergraduate Oral Presentation:

Presented by: _____

Rubric – Completed by: _____ Date: _____

(To be completed by instructor. Please indicate any category not relevant to presentation)

Attribute for ORAL	Does Not Meet Expectations *Provide a short explanation for each attribute That you select in this category.*	Meets Expectations	Exceeds Expectations
Overall quality of presentation	___Poorly organized ___Poor presentation ___Poor communication skills ___Slides and handouts difficult to read	___Clearly organized ___Clear presentation ___Good communication skills ___ Slides and handouts clear	___Well organized ___Professional presentation ___Excellent communication skills ___Slides and handouts outstanding
Overall breadth of knowledge	___Presentation unacceptable ___Presentation reveals critical weakness In depth of knowledge in subject matter ___Presentation does not reflect well developed critical thinking skills ___Presentation is narrow in scope ___No application to Poultry Science	___Presentation acceptable ___Presentation reveals some depth of knowledge in subject matter ___Presentation reveals above average critical thinking skills ___Presentation reveals the the draw from knowledge in several disciplines ___Application to Poultry Science evident	___ Presentation superior ___ Presentation reveals exceptional depth of subject knowledge ___ Presentation reveals well developed critical thinking skills ___ Presentation reveals the ability to interconnect and extend knowledge from multiple disciplines ___ Presentation shows clear application to Poultry Science
Quality of response to questions	___Responses are incomplete or required prompting ___Arguments are poorly presented ___Respondent exhibits lack of knowledge in subject area ___Response do not meet level expected of B.S. degree ___Student does not realize the connection presented work to poultry science	___Responses are complete ___Arguments are well organized ___Respondent exhibits adequate knowledge in subject area ___Response meet level expected of B.S. degree ___Student adequately connects presented work to poultry science	___Responses are eloquent ___Arguments are skillfully presented ___Respondent exhibits superior knowledge in subject area ___Responses exceed level expected B.S. degree ___Student is able to discuss in depth the connection of thesis research to poultry science
Overall assessment	___Does not meet expectations	___Meets Expectations	___Exceeds Expectations
Confidential Comments:			

Undergraduate Written Paper:

Presented by: _____

Rubric – Completed by: _____ Date: _____

(To be completed by instructor. Please indicate any category not relevant to presentation)

Attribute for WRITTEN	Does Not Meet Expectations *`Provide a short explanation for each attribute that you select in this category*	Meets Expectations	Exceeds Expectations
Overall quality of written content	___Arguments are incorrect, incoherent, or flawed ___Objectives are poorly defined ___Demonstrated rudimentary critical thinking skills ___Does not reflect understanding of Subject matter and associated literature ___Demonstrates poor understanding of theoretical ___Demonstrates limited originality ___Displays limited creativity and insight	___Arguments are coherent and clear ___Objectives are clear ___Demonstrates average critical thinking skills ___Reflects understanding of theoretical concepts ___Demonstrates understanding of theoretical concepts ___Demonstrates originality ___Displays creativity and insight	___Arguments are superior ___Objectives are well defined ___Exhibits mature, critical thinking skills ___Exhibits mastery of subject matter and associated literature ___Demonstrates mastery of theoretical concepts ___Demonstrates exceptional originality ___Displays exceptional creativity and insight
Quality of writing style	___Writing is weak ___Numerous grammatical and spelling errors ___Organization is poor ___Documentation is poor	___Writing is adequate ___Some grammatical and spelling errors apparent ___Organization is logical ___Documentation is adequate	___Writing is publication quality ___No grammatical or spelling errors apparent ___Organization is excellent ___Documentation is excellent
Overall assessment	___Does not meet expectations	___Meets Expectations	___Exceeds Expectations
Confidential Comments:			

Department of Poultry Science

Graduating Senior Exit Interview

Name:

Address:

Telephone: Email:

Why did you choose to study at the University of Arkansas, Fayetteville?
:_____

_____

_____

Reason for Choosing
POSC:_____

_____

_____

Most Liked Classes and why:

_____

_____

Least Liked Classes and why:

_____

_____

Do you feel prepared for the work force?

_____

_____

Have you accepted a job yet? If yes, Please give company name and location

_____

_____

_____

Starting Salary:_____per year.

If you have not accepted a job at this time are you planning to attend graduate school?

At any time did a professor or instructor discuss with you a career in research or teaching and/or attending graduate school as a first step in that direction? Yes_____ No_____

If you have not accepted a job and are not planning to attend graduate school do you want to be contacted in case companies contact the department looking for poultry science graduates? Contact info:

_____
_____

_____
_____

In which term did you start your degree program?

_____

Were you a transient student? If so, what college?

_____

Who was your academic advisor?_____

Indicate your level of satisfaction with the supervision and guidance you received from your advisor.

Low or poor

Below average

Average

Above Average

Excellent

While in school, how many hours per week did you typically work to earn money to support yourself?

a. none

1-10 hrs/wk

10-20 hrs/wk

More than 20 hrs/wk

My cumulative GPA (U of A):

a. 2.00 to 2.49

2.50 to 2.99

3.00 to 3.49

3.50 to 4.00

My GPA in my major is :

a. 2.00 to 2.49

b. 2.50 to 2.99

c. 3.00 to 3.49

d. 3.50 to 4.00

Technology Services

a) Low or poor
b) Below average
c) Average
d) Above Average
e) Excellent

Library Services

a) Low or poor
b) Below average
c) Average
d) Above Average
e) Excellent

Research Support : Access to faculty involved in research

a) Low or poor
b) Below average
c) Average
d) Above Average
e) Excellent

Research Support: Access to up-to-date facilities such as laboratories, research centers, specialized training

a) Low or poor
b) Below average
c) Average
d) Above Average
e) Excellent

Do you have any comments:_____

_____

_____

_____

_____

Name _____ Date _____

Major: Poultry Science_____Animal Science_____Other

Classification:
A. Freshman
B. Sophomore
C. Junior
D. Senior
E. Transfer

Poultry Pre and Post Assessment Test

Multiple Choice (circle the SINGLE BEST answer):

1) Marek's disease is characterized by:

a. Neoplastic (cancer) disease only in old chickens
b. Neoplastic (cancer) disease only in turkeys
c. Neoplastic (cancer) disease involving the bursa of Fabricius
d. Neoplastic (cancer) disease involving feather follicles and nerve tissue
e. Neoplastic (cancer) disease usually causing tumors in the head

2) Lymphoid Leukosis:

a. Is usually caused by poor sanitation
b. Is prevented by appropriate vaccination
c. Can be treated with antibiotics
d. Often is associated with respiratory disease
e. None of the Above

3) Infectious Bronchitis

a. Is an extremely contagious upper respiratory disease
b. Has both respiratory and uremic forms
c. Has no effect on egg production
d. A and B above
e. None of the Above

4) Inflammation and atrophy of the bursa of Fabricius, immediately followed by bursal regression, immunosuppression and susceptibility to many other diseases is often the result of:

a. Coccidiosis
b. Mycoplasmosis
c. Histomoniasis
d. Infectious Bursal Disease
e. Marek's Disease

5) Signs and lesions assoicated with Infectious Coryza include:

a. Infraorbital Sinusitis, diarrhea and dyspnea in older chickens
b. Infraorbital Sinusitis, facial swelling, coughing, sneezing, nasal discharge primarily in young immature chickens
c. Infraorbital Sinusitis, facial swelling, coughing, sneezing, nasal discharge primarily in older mature chickens

d. Immunosuppression and susceptibility to other diseases

6) The incubation period for the turkey egg is:

a. 21 days
b. 23 days
c. 25 days
d. 28 day

7) The primary reason chickens are taken off feed before processing is to:

a. Save money
b. Prevent birds from gaining too much weight
c. Reduce contamination
d. Make the birds easy to catch

8) What is the primary role of ventilation in a commercial poultry barn during cold weather:

a. Keep oxygen levels high
b. Remove moisture
c. Keep birds warm
d. None of the above

9) During processing, the chicken carcass is placed in hot water in order to:

a. Kill bacteria
b. Loosen the feathers
c. Make the birds cleaner
d. None of these

10) Sudden Death Syndrome in broilers is associated with:

a. Birds accidentally choking to death when they eat
b. Aortic Rupture
c. Poisoning
d. None of the above

11) During the life of a broiler chicken, it may be fed as many as:

a. One diet
b. Two diets
c. Four diets
d. Eight diets

12) Litter quality can directly impact what part of a processed bird:

a. Wings
b. Feet
c. Breast meat

d. Tenders

13) What organ plays a key role in the immune system in broiler chickens:

a. Kidneys
b. Bursa of Fabricius
c. Pineal gland
d. Cloaca

14) Which of the following does not undergo biological regeneration occurs when a bird molts?

a. Feather
b. Ovary
c. Oviduct
d. digestive system

15) Which of the following is not considered an egg abnormality?

a. Double yolk
b. Membrane
c. B –grade
d. body check

16) How long are chicken eggs in the setter before transfer to the hatcher?

a. 14
b. 16
c. 18
d. 20

17) What meat animal is indigenous to North America

a. Chicken
b. Duck
c. Pheasant
d. Turkey

18) Why are eggs turned during incubation?

a. Avoid embryo sticking to inner shell
b. Stimulate embryo growth
c. reduce incubation time
d. shorten hatch window

19) Providing a balanced diet makes up this amount of total live cost of production.

a. 35%
b. 50%
c. 70%

d. 85%

20) A lack of this nutrient will cause the most serious nutritional deficiency.

a. Carbohydrates
b. Proteins
c. Water
d. Vitamins
e. Minerals
f. Fats and oils

21) Phytate is the name of an organic structure in cereal and legume grains that is primarily bound to this mineral. A commercially sold enzyme called phytase can be added to poultry feed for making this mineral available to poultry.

a. Magnesium
b. Cobalt
c. Sodium
d. Phosphorus
e. Selenium

22) Warfarin (rat poison) and sulfaquinoxaline (coccidiostat) are well known anti-coagulants because they interfere with this vitamin.

a. Vitamin A
b. Vitamin C
c. Vitamin K
d. Vitamin D
e. Folic acid

23) The gastrointestinal tract of poultry **does not** contain this anatomical structure.

a. Cecum
b. Rumen
c. Proventriculus
d. Gizzard
e. Cloaca

24) Approximately how many pounds of feed are required to produce each pound of live weight gain in broilers grown to an average market weight?

a. 0.9
b. 1.9
c. 2.9
d. 3.9

25) As broilers age, their dietary **energy/calorie** needs _____ and their dietary **protein** needs _____.

a. Decrease, decrease
b. Decrease, increase

c. Increase, decrease
d. Increase, increase

26) The primary protein-providing ingredient used in US poultry diets is:

a. Soybean meal
b. Wheat
c. Corn
d. Meat and bone meal

27) Compared with meal/mash, which of the following is **not** an advantage of providing poultry feeds in the form of pellets/crumbles?

a. Improved flow of feed through bins/feeders
b. Decreased feed segregation
c. Reduced feed wastage
d. Lower feed production cost

28) Which of these compounds is **not** classified as an amino acid?

a. Lysine
b. Carotene
c. Methionine
d. Threonine

29) Which of these compounds would **not** potentially be included as part of a triglyceride?

a. Linoleic acid
b. Glycogen
c. Glycerol
d. Linolenic acid

30) _____ is secreted by cells in the proventriculus (stomach) of poultry to aid in the denaturation/digestion of proteins.

a. Acetic acid
b. Sulfuric acid
c. Hydrochloric acid
d. Ascorbic acid

Short Answer:

31) The glandular stomach of the avian species is called the _____; the muscular stomach of the bird is called the _____.

32) The liver of the bird produces _____ which is stored in the _____.

33) The first branches off of the aorta in birds are the _____arteries; the aorta curves to the _____ in birds.

34) The three meninges of the avian brain are the _____, _____, and _____.

35) The vein at the back of the thigh is the _____, the artery at the front of the thigh is the _____.

36) The three avian immunoglobulins are _____, _____ and _____.

37) The avian testicle is innervated via the _____ nerve. The ovary is drained via the _____ vein.

38) The longest bone of the avian leg is the _____; the short tubular bone is the _____.

39) The _____ is the slit like opening in the hard palate of the bird that communicates with the sinuses and respiratory system of the head.

40) The avian heart is surrounded by a sac called the _____. The heart rate of a chicken is about _____ beats per minute.

41) What is the process that inactivates all pathogenic bacteria (e.g. *Salmonella*) and is required of all liquid egg products?

42) Name the two proteins that are responsible for foaming ability (volume) and stability and indicate which protein is responsible for which characteristic.

43) As the egg ages, what two compounds evaporate during normal storage and what happens to the egg as a result?

44) What are two purposes of cooking poultry meat?

45) What is the moisture retention rule mandated by FSIS?

46) What are some problems that occur when stunning with amperage that is too high?

47) List four bacterial growth requirements

48) What are three pathogenic bacteria that are concerns in the poultry meat industry (on either raw or cooked product).

49) What are the two main functional proteins in further processed meats?

50) What are six unit operations of primary processing of poultry?