Texas A&M University  
Core Curriculum  
Initial Request for a Course Addition to the Fall 2014 Core Curriculum  

Foundational Component Area: Life and Physical Sciences

In the box below, describe how this course meets the Foundational Component Area description for Life and Physical Sciences. Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method. Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

How does the proposed course specifically address the Foundational Component Area definition above?

POSC 201 General Avian Science surveys the basic biology of avian species (anatomy, physiology, basic genetics), environmental sciences (feed source, water, light, temperature, atmosphere, nutrient elements) and disease and health factors that potentially impact the growth, development, fertility and productivity of wild and commercial poultry. Each topic begins with the fundamental scientific basis of the topic and, when appropriate, discusses the scientific method used to develop conclusions. Subsequent discussion, then follows to assess the impacts on avian species and practical application to enhance commercial production efficiency.

Core Objectives

Describe how the proposed course develops the required core objectives below by indicating how each learning objective will be addressed, what specific strategies will be used for each objective and how student learning of each objective will be evaluated.

Critical Thinking (to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information):

How Addressed
Students will develop critical thinking skills through integration of “structure-function” relationships, “anatomy/physiology-bird relationships”, “environment-performance” interactions, or deduction of effects from disease pathogenicity.

Strategies
Each topic will begin with discussion of the scientific background, followed by how this relates to biological effects and ultimately bird performance and health. Practical applications then follow. Examples would be:
Lectures on anatomy would begin with the description of system functionality such as functions of the avian digestive tract, which will be followed by a lecture on nutrient digestion, absorption, and utilization. Class discussion would focus on the specific requirements and purposes for specific nutrients such as carbohydrates and amino acids and how different birds, species and strains have different requirement based growth expectations and egg production followed by discussion of dietary formulations for different birds strains. These in-class discussions are used to stimulate critical thinking and at stimulating thoughts associated with inclusion/exclusion of dietary nutrients and what possible deficiencies might result. The lectures progress through the semester and each new topic builds on the previous allowing the student to evaluate environmental/nutritional/genetic effects on physiology and ultimately production performance.

How evaluated
Each exam will have questions formulated to test for the student’s ability to answer these types of questions.

Communication (to include effective development, interpretation and expression of ideas through written, oral and visual communication):
Texas A&M University

Core Curriculum

Initial Request for a Course Addition to the Fall 2014 Core Curriculum

How addressed
Active learning is used throughout the course, which includes classroom discussion with students. Students are provided questions or scenarios during the lecture followed by student discussion of the question/scenarios posed during the same lecture session and covering information that has just been provided.

Strategies
Students will be given real-world scenarios and questions throughout most lectures, which will be discussed during the lecture. Questions about current and perhaps controversial issues will be used to stimulate student thought, to reflect on the topic and reach a conclusion or stance. An example might be to consider “The impact of rearing conditions (free range vs convention) on avian health, well being, behavior, and production performance?” These questions typically cover information that is currently being discussed in the media such as animal rights, avian influenza, nutritional value of products produced under different rearing systems and the future of animal production systems. This has been an effective approach to stimulate students to express their thoughts and opinions and enables them to apply newly acquired knowledge to real world situations.

How evaluated
To ensure each student can independently express ideas, exams will include a discussion format evaluating the student’s ability to express concepts and personal views in writing. The student is not graded on the opinion portion of the answer, but rather was the information provided correct and clear.

Empirical and Quantitative Skills (to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions):

How addressed
The scientific basis of poultry science lends itself to quantitative or qualitative analysis. An example would be deductive reasoning to diagnose causal abiotic and biotic stress on avian health and performance.

Strategies
Students will develop basic quantitative skills in areas such as environmental and nutritional inputs on avian physiology and performance. Practical application may include mathematically calculating production and or feed cost, egg production, and feed consumption. Students will use reasoning to identify potential nutrient deficiencies based on avian species and strain type.

How evaluated
Exam questions will be formulated to test the students ability solve problems, such as determining feed conversion ratio and egg production data from given scenarios.

Teamwork (to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal):

How addressed
The major pedagogical approach used in lecture includes active learning exercises with students. Real world scenarios will be used to initiate group discussions and allow immediate application of knowledge.

Strategies
Students will participate in group learning exercises, such as evaluating production in different rearing conditions given real world scenarios, determine observed genotypes given differing genetic mating’s, etc. Following these group