

## **PO 4423 Feed Manufacturing: Spring 2013**

**Tuesdays and Thursdays 8:00 – 9:15 AM; 117 Hill Poultry Science Building**

**Instructor:** Kelley G.S. Wamsley, PhD

**Office Location:** 209 Hill Poultry Science Building

**Office Hours:** If I am in my office stop by; otherwise, please schedule an appointment

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**Required Text:** None, all course content will be provided. A hole-punch and a 3-ring binder are recommended to keep class materials organized. All course material will be provided and derived from the following materials:

- Feed Manufacturing Technology V (American Feed Industry Association) 2005
- Current research in the area of feed manufacture
- Personal experiences of the instructor
- Relevant peer-reviewed and popular press articles
- Hands-on learning; field trips to commercial operations

**Course Description:** This course is designed to help students develop the ability to formulate poultry diets and appreciate the chain of events that must prior to feed being consumed by a bird. This course will briefly review poultry nutrition, feed ingredients, and equipment utilized to test the nutritional value of a particular feed ingredient. From this course, students will understand the importance of various feed additives and ingredients to commercial poultry feed manufacture and feeding; and be able to apply this knowledge to formulate a nutritionally balanced diet. Students will also cultivate an intimate knowledge for all equipment utilized in the feed manufacture process, commercial feed manufacture methodologies, and specific strategies that may be employed via dietary or manufacture manipulation to maximize poultry performance in a cost effective manner. In this course, students will develop writing, presentation, group learning, communication, math, and deductive reasoning skills in order to solve real-world problems/scenarios to prepare them for employment. Relevant scientific research reports will be used as teaching aids to help students construct skills to interpret results from statistically analyzed data displayed in charts and/or graphs.

## **Course Learning Outcomes**

### ***Content Specific***

1. Students will identify and categorize the nutrients provided by specific feed ingredients, as well as equipment and research methods that may be employed to determine feed ingredient/diet composition/quality. In addition, describe any benefits/problems associated with these ingredients in regards to: processing prior to their incorporation in diet formulation, during the feed manufacture process, and/or feeding.
2. Students will be able to formulate a balanced poultry diet when given nutrient specifications and provide recommendations for processing/manufacture.
3. Students will be able to describe function/methodology of use for feed manufacture equipment typically utilized in a commercial setting.
4. Students will be able interpret research on diet formulation and/or feed manufacture using scientific literature, organize and create a power-point presentation; and be able to communicate ideas to an audience.

### ***Skill Specific***

5. Students will develop writing, group learning and communication skills, as well as be able to debate and defend their view on an agriculture related topic.
6. Students will be able to interpret graphs and charts that involve statistically analyzed data and make inferences as to what the data suggests.
7. Students will use deductive reasoning skills and math in order to solve real-world problems.

## **Course Policies<sup>a</sup>**

***Attendance:*** Attendance is required in order to earn full class participation and clicker question points. If a student is unable to attend class, prior notice must be given to the instructor. University excused absences will be honored.

***Missed presentations/exams:*** Prior notice must be given in order to make proper arrangements. If prior notice is not given, then the instructor will not allow the student to make up missed presentations/exams.

**Academic honesty policy:** Academic dishonesty is deliberately taking someone else’s idea or work and passing it off as your own. This will not be tolerated in the classroom. Students will be responsible for following the Universities academic honesty regulations. These are defined in the new **MSU Honor Code** (*see below*).

Specifics of the Honor Code are shown in the AOP No. 12.07. This can be viewed at <http://www.msstate.edu/dept/audit/1207.html>.

**MSU HONOR CODE - “As a Mississippi State University student I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do.”**

*Upon accepting admission to Mississippi State University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor Code. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the MSU community from the requirements or the processes of the Honor Code.*

*For additional information please visit: <http://students.msstate.edu/honorcode/>*

**Special Needs:** Those students requiring special assistance are encouraged to talk to the instructor early on to make special arrangements involving tests, assignments, etc.

**Electronic device policy:** Academic Operating Policy 10.08, classroom regulations, prohibits student use of cell phones, messaging devices and other electronic devices in the classroom unless authorized by the instructor.

**Other available study or assignment aids:** Review sessions for exams will be offered outside of regular class. These dates and times will be determined at least one lecture period prior to the exam.

<sup>a</sup> As a class we will create any additional course policies that we, as a class agree upon.

<b>Grading:</b>	<b>(Pts)</b>
Group Presentation <sup>a</sup>	150
Paper <sup>b</sup>	100
Exams (2 @ 100 pts each) <sup>c</sup>	200
Diet Formulation Problems <sup>d</sup>	100
Class Participation <sup>e</sup>	100
Clicker Questions <sup>f</sup>	100
Written Responses <sup>g</sup>	150
<u>Final Exam (Cumulative)</u>	<u>200</u>
<b>Total Points</b>	<b>1100</b>

**Final Grade Point Scale**

1100 – 984 pts = A
983 – 874 pts = B
873 – 764 pts = C
763 – 654 pts = D
< 654 pts = F

<sup>a</sup> **Group Presentation:** Groups will be randomly assigned and consist of approximately 3 people (depending on class size). One peer-reviewed paper that pertains to diet formulation or feed manufacture will be assigned to each group. Expectations will be given for the group presentation as a supplemental hand-out. Each group member must contribute to the presentation equally. As a group, students will receive a grade based on instructor/peer-review of your presentation (instructor 75 pts, peer-review 25 pts). Additionally, groups will grade themselves for their individual contributions and performance (50 pts). All of these factors will contribute to an individual student's overall grade for this assignment, based on 150 points. See course policies for missed presentations/exams.

<sup>b</sup> **Paper:** This paper will be based off of the peer-reviewed paper that you were assigned to do a group presentation on, but this should be considered as an individual project on this paper. Expectations will be given as a supplemental hand-out. *Due date: March 26(in class)*. See course policies for the policies for academic dishonesty and missed presentations/exams.

<sup>c</sup> **Exams:** Two exams will be given based on all class notes, presentations, and assignments covered prior to the exam date. See course policies for missed presentations/exams.

<sup>d</sup> **Diet Formulation Problems:** At least two assignments will be given that will require students to formulate at least one diet formulation. All students need to have access to a computer in order to perform this assignment. If a student does not have access to a computer, notify the instructor ASAP.

<sup>e</sup> **Class Participation:** This course is student-centered and allows for a lot of interaction between students and the instructors, as well as students with students. This open dialogue is designed to help students understand difficult concepts and have more control over their learning process. Given this, class attendance and participation is necessary and will be recorded by the instructor. In addition, there will be 1-2 field trips that will be arranged for the end of the semester. These field trips are time consuming, but student will be rewarded through attendance points and their purpose is to give a 'big picture' concept for the class.

<sup>f</sup> **Clicker Questions:** Each student will be assigned a clicker number at the beginning of the semester. It is the student's responsibility to arrive to class early enough to get the clicker and to remember to turn it in at the end of class. No student will be able to use any clicker besides their own or it will be considered cheating. Clicker questions will represent a way to obtain attendance points and review previously covered topics. Many of the clicker questions (or a version of them) will be used for exam questions. Each clicker question will be worth 1 point; an additional 1 point will be given for at least one clicker question for each lecture when the correct response is given.

<sup>g</sup> **Written Responses:** The instructor will give students either a short article or show a video to elicit a reaction from students. Students will need to construct, organize and express their

reaction to the topic on paper. The amount of time given for the written response will be announced at the time the instructor presents the topic.

**Course Schedule\***

<b>Week</b>	<b>Tuesday Lecture</b>	<b>Thursday Lecture</b>
1	Introductions/Review Syllabus	Nutrition Review
2	Nutrition Review/Feed Ingredient Testing	Feed Ingredients
3	Feed Ingredients/Diet Formulation	Diet Formulation
4	<i>Lecture Cancelled</i>	<i>Lecture Cancelled</i>
5	<b>Review</b>	<b>Exam 1</b>
6	Feed Mill Layout/Quality Control	Feed Mill Layout/Receiving/Storage
7	Grinding/Mixing	Pelleting Process
8	Pelleting Process/Coolers	<i>Lecture Cancelled</i>
9	<b>Review/Group Presentation Assignment</b>	<b>Exam 2</b>
10	<i>Spring Break 2013</i>	
11	Ingredients that affect Feed Manufacture	Ripeners, Expanders, Hygienizers
12	<b>Paper Due/Group Presentations</b>	<b>Group Presentations</b>
13	Tentative Field Trip for either Tues or Thurs, other lecture day cancelled	
14	<b>Group Presentations</b>	Specialized Feed Ingredients
15	Extruders/Specialized Topic	Specialized Topic
16	Review for Final Exam	<i>Reading Day (No mandatory class)</i>
17	Final Exam	

**\*The instructor reserves the right to alter class plans**