

Course Syllabus
PO 4324/6324 Avian Reproduction
Fall Semester

Dr. Chris McDaniel, Professor of Poultry Science

General overview of class:

Avian reproductive physiology and its application to management of poultry for maximum reproductive performance will be discussed. Reproductive characteristics of several different species of birds will be examined; however, the broiler breeder will serve as the major discussion topic. This course will be divided into three major sections which are as follows: the male, the female, and combined sex topics (breeding and genetics, fertilization, embryonic development, fertility, hatchability, etc.). A basic biology approach will be utilized in both lecture and laboratory to explain applied agricultural science topics so that students may develop the independent thinking process.

There is no textbook for this class, so students will be expected to take notes during lecture. Not all test material will be written on the board, therefore students must pay attention during class and ask questions. Students that interrupt the class by talking during lecture will be removed from the classroom.

Testing:

Every other week during the semester, students will be given an opportunity to express the knowledge that they learned in class. To encourage studying throughout the semester and not just the night before the exams, short, 10 minute quizzes will be given approximately every 4 weeks of the semester and each will count for 4% of the total grade. Between each of the quizzes, 1 hour exams (4 total) will be given with each representing 16% of the total grade.

Every quiz and exam will be designed so that many different styles of questions are utilized. Defining questions, true or false questions, multiple choice questions, short answer questions, and essay questions will each represented 20% of the points on every test. This testing style allows for a complete examination of the amount of knowledge that the student retains.

Laboratory:

The laboratory section of this class constitutes 24% of the grade earned. Each of the 15 lab meetings is worth 10 points. For a few lab meetings only attendance will be required to earn the 10 points; however, for most lab meetings a report must be turned in either at the end of the lab period or by the following lab period. Lab reports that are due at the beginning of the next lab period must be typed and include the following: an introduction describing what you did and the materials you used, a results section with computer generated graphs and analysis, and a discussion section that describes your interpretation of the results.

Point Distribution:

The grade earned by each student in this class will be determined by averaging the four 1 hour test grades, quiz grades, and lab as follows:

1 st 10 minute quiz	4%	=	25 points
1 st 1 hour test	16%	=	100 points
2 nd 10 minute quiz	4%	=	25 points
2 nd 1 hour test	16%	=	100 points
3 rd 10 minute quiz	4%	=	25 points
3 rd 1 hour test	16%	=	100 points
Lab	24%	=	150 points
<u>Final Examination</u>	<u>16%</u>	=	<u>100 points</u>
Total	100%	=	625 points

Grades will be assigned on a 10 point scale.

- A = 90-100%
- B = 80-89
- C = 70-79
- D = 60-69
- F = <60

Graduate Student Requirement:

Graduate students will be required to write a literature review on a recent topic of interest in avian reproduction. The graduate students will then present this information before the class in the form of a 15-20 minute oral presentation. The written and oral presentation will each count 4% of the final grade or 25 points. Therefore the total points for graduate students will be 675 points.

Academic Misconduct:

The 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/>

Students will be monitored during every test for cheating. Those found cheating will be subjected to all University rules and regulations regarding cheating, including an “F” in the course for the first academic misconduct offense.

Class Attendance

The University policy on class attendance will be strictly adhered to. Because there is no textbook for this class, students that do not attend class and lab regularly will ultimately fail. Makeup examinations and lab reports will only be given for excused absences, otherwise a zero grade will be given.

Outside of Classroom Assistance

My office is in room 213 of the Hill Poultry Science Building. My office phone number is 325-1839. If I am not in, leave a message on my voice mail.

Class Outline and Calendar
for
Avian Reproduction (PO4324/6324)

Class Meeting:	1	Basic Genetics: Chromosomes, Genes, Phenotypes, and Geneotypes
	2	Heritability, Selection and Hybrid Vigor
	3	Sex Linked Traits LAB 2: Feather Sexing a Sex linked Trait
	4	10 Minute Quiz and Lecture on Poultry Breeding Schemes
	5	Poultry Traits Selected For
	6	Macro and Microscopic Female Reproductive Anatomy LAB 3: Female Reproductive Anatomy In and Out of Production
	7	Labor Day Holiday
	8	Female Reproductive Endocrinology
	9	Ovulation and Oviposition LAB 4: Hormonal Control of Oviposition
	10	1 Hour Test
	11	Factors Affecting Female Reproduction, Arbor Acres Management Video
	12	No Class LAB 5: NO LAB, MPA Trip to Destin, FL
	13	Female Management Techniques - House Preparation
	14	Brooding Stage- Temperature, Floor Space, Feeding, Water, Light
	15	LAB 6: Photostimulation and Reproduction
	16	Growing Stage- Floor space, Light, Ventilation
	17	10 Minute Quiz and Lecture on Feeding during the Growing Stage
	18	Growing Stage- Rules of Feed Restriction, Bird Weights and Uniformity LAB 7: Uniformity Calculations
	19	Laying Stage- Explanation of Shell Quality and How to Measure It
	20	LAB 8: Egg Characteristics and Shell Quality of Young and Old Birds
	21	Laying Stage- Floor Space, Nest, Measures of Egg Production, Feeding
	22	1 Hour Test
	23	Macro and Microscopic Male Reproductive Anatomy
	24	Spermatogenesis LAB 9: Male Reproductive Anatomy and Semen Collection
	25	Male Reproductive Endocrinology, Sertoli Cells, Phases of Development
	26	Factors Affecting Male Reproduction, Rearing Schemes
	27	Explanation of Semen Quality and How to Measure It LAB 10: Semen Quality

Outline and Calendar Continued

- 28 **10 Minute Quiz** and Lecture on Artificial Insemination -Pros and Cons
29 Artificial Insemination - On Farm
 LAB 11: Artificial Insemination Technique and Calculations
30 **Fall Break- No Class**
31 Brooding, Growing, and Mating Stages as well as Spiking
32 Fertilization and Early Embryonic Development
- 33 Fertilization and Early Embryonic Development
 LAB 12: Fertilization - Sperm Egg Penetration and Fresh Egg Breakout
34 **1 Hour Test**
35 Methods for Determining Fertility, Egg Handling and Egg Storage
36 Early Embryonic Mortality
 LAB 13: Candling and Early Embryonic Development
37 Incubation- Factors Affecting Embryonic Development in the Setter
 Setter Humidity
38 Egg Turning, Ventilation, and Factors Affecting Incubational Length
39 Factors Affecting Embryos in the Hatcher - Hatch Calculations
 LAB 14: Hatch Residue Analysis Breakout
40 Causes of Hatch Failures-Hatch Residue Analysis, What to Expect
41 Chick Quality, Vaccination, and Diseases
42 Most Recent Research Topics in Avian Reproduction
43 Miracle of Life Video
44-45 Thanksgiving Holiday
- 46 Graduate Student Presentations
47 Final Exam