

**AnSc 4711: Breeder Flock and Hatchery Management; 3 Cr.
SYLLABUS**

Instructors:

Ron Kean, University of Wisconsin-Madison, rpkean@wisc.edu
Dr. Sally Noll, University of Minnesota, nollx001@umn.edu
Dr. Mike Wineland, NC State University, mwinelan@ncsu.edu

Scheduled Time/Dates:

Instructional Lecture:	Monday - Friday: 8:30 am – 12:00 pm
Hands-on Laboratory/Field/Farm (poultry) Work:	Monday - Friday: 1:00 pm – 5:00 pm
Scheduled:	June 13 th – June 24 th

Locations:

Teaching Classroom – ABLMS 125
Teaching Lab - ASVM 448; Poultry Farm (1835 Buford Pl.)

Instructional Time & Student Workload Assessment:

This course meets the UMN administrative policy for instructional time per course credit and student workload expectations.

Office Hours: Please request (via email) a meeting with each instructor as needed.

Course Description:

History of artificial incubation relevant to the U.S. hatching industry. Practices involved in successful incubation of hatching eggs and embryonic development in birds. Management factors involved in breeder hen production and operating a hatchery.

Student Outcomes:

At the completion of this course, students should be able to:

1. Identify normal incubation requirements and problems associated with improper conditions.
2. Evaluate biosecurity plans and measures of microbial cleanliness of hatcheries.
3. Identify current management systems for poultry breeding flocks and understand differences among different species.
4. Apply knowledge of incubation and breeder management systems to analyze industry situations.

Grading:

Your final grade for this course is calculated from a total of 400 points:

Exam 1:	100 points
Exam 2:	100 points
Exam 3:	100 points
Topical Paper Discussion:	40 points
Problem Set:	40 points
Participation:	20 points

Final grades are assigned as follows:

A	372-400 points
A-	349-371 points
B+	336-348 points
B	322-335 points
B-	310-321 points

C+	298-309 points
C	286-297 points
C-	274-285 points
D+	262-273 points
D	250-261 points
D-	239-249 points
F	238 points or less
D-	239-249 points
F	238 points or less

Expectations:

Class participation is an important aspect of active learning and is directly beneficial to the student and their peers. The best way to get the most out of this class is participation, asking questions, and networking with your peers and guest speakers. The poultry industry is small and offers many job opportunities. As Poultry Science Departments and classes are disappearing across the country, this class is an excellent way to get your foot in the door to discover an interest you didn't know you had, or also help you find what you do not want to do for a career. When Canvas or any online/ email option is used to submit class work, it is the sole responsibility of the student to ensure documents are submitted on time and in a readable format. Any malfunction is the responsibility of the student and students must clearly communicate that the final form has been submitted when submitting over email.

The nitty gritty:

Missed in-class evaluation (quizzes and exams) cannot be made up and students will receive a zero. Missed labs or evaluations may be made up only for sponsored activities. The student must provide signed official documentation of this sponsored event or forfeit all points associated with the missed class time. If you have an emergency, you must email the instructor before class or lab begins. Lab attendance will be monitored, and full participation is required. Early departure from lab is disrespectful to the instructor and peers and will not be tolerated. Late work is not accepted and will receive a zero. Syllabus is subject to change.

Biosecurity:

We maintain a strict biosecurity policy of 72 hours without bird contact to enter the research and teaching facilities; this includes **commercial, research, hobby, or pet birds** that would interfere with compliance to the biosecurity policy. Please let me know if you have potential conflicts with this policy as soon as possible. Additionally, all students should wash hands after lab section to avoid self-contamination with communicable infectious diseases naturally harbored by poultry, including but not limited to: salmonella, e. coli, campylobacter, etc.

Labs and Field Trips:

This course requires involvement lab sessions, well as field trips. Transportation will be provided.

Photography:

Cell phone use or photography during lab is strictly prohibited. Any use of cell phones for any purpose during lab will result in removal of the student from the lab and forfeit of all points associated with that day.

Dress code:

Clean, close-toed shoes, and long pants. Clothes that have been in contact with other livestock or hobby animals must be laundered before being worn at any livestock farm. We are going to be working with poultry in the lab sections, so please be mindful you may get dirty.

Scholastic Dishonesty:

You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code: http://regents.umn.edu/sites/regents.umn.edu/files/policies/Student_Conduct_Code.pdf) If it is determined that a student has cheated, the student may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see: <http://policy.umn.edu/education/instructorresp>. The Office for Community Standards has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: <https://communitystandards.umn.edu/avoid-violations/avoiding-scholastic-dishonesty>. If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class-e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

Disability Accommodation

The University of Minnesota views disability as an important aspect of diversity and is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

- If you have, or think you have, a disability in any area such as, mental health, attention, learning, chronic health, sensory, or physical, please contact the DRC office on your campus (UM Twin Cities - [612.626.1333](tel:612.626.1333)) to arrange a confidential discussion regarding equitable access and reasonable accommodations.
- Students with short-term disabilities, such as a broken arm, **can** often work with instructors to **minimize** classroom barriers. In situations where additional assistance is needed, students should contact the DRC as noted above.
- If you are registered with the DRC and have a disability accommodation letter dated for this semester or this year, please contact your instructor early in the semester to review how the accommodations will be applied in the course.
- If you are registered with the DRC and have questions or concerns about your accommodations, please contact your (access consultant/disability specialist).
- Additional information is available on the DRC website UM Twin Cities - <https://diversity.umn.edu/disability/>) or e-mail (UM Twin Cities - drc@umn.edu) with questions.

Sexual Harassment

"Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents Policy: https://regents.umn.edu/sites/regents.umn.edu/files/policies/Sexual_Harassment_Sexual_Assault_Stalking_Relationship_Violence.pdf

Equity, Diversity, Equal Opportunity, and Affirmative Action

The University provides equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy:

http://regents.umn.edu/sites/regents.umn.edu/files/policies/Equity_Diversity_EO_AA.pdf.

Mental Health and Stress Management

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website:

<http://www.mentalhealth.umn.edu>.

Academic Freedom and Responsibility: *for courses that do not involve students in research*

- Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled. *
- Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost. [*Customize with names and contact information as appropriate for the course/college/campus.*]
- *Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".*

Monday

8:30 - 9 am	Course introduction, introduce problem sets,	Noll
9 – 10	Introduction to poultry production systems	Kean - zoom
10-12	Feed restriction concepts in breeding poultry	Noll
1-3	Lighting program concepts for breeding poultry	Noll
3-4	Environmental considerations for breeders	Noll

Tuesday

8:30 – 10:30	Layer Breeder Management	Pettit
10:30-11:30	Bird behavior and relation to management decisions	Kean - zoom
1-2	Layer Breeder Necropsy Lab	Pettit, Noll, Porter
2-3:30	Turkey breeder rearing and flock management	Noll
3:30-4:30	Turkey breeder flock management	Noll

Wednesday

8:30-9:30	NPIP and breeder farm biosecurity	Noll
9:30-10:30	Broodiness and broodiness control	Noll
10:30-11:30	Introduction to artificial insemination	Noll
1-2:30	AI and behavior monitoring	Noll/Kean
2:30-4	Broiler breeder rearing and flock management	Kean

Thursday

8:30 – 9:30	Exam 1	
9:30-11	Organization and genetic flow in the poultry industry, breeder selection strategies	Kean
11-12	Gait Scoring / Footpad Scoring	Kean
1 – 3	Hatchery Virtual Tour	Lies
3-4	Semen Quality Lab	Noll / Kean

Friday

8:30-10:30	Equipment overview, environment monitoring	Noll / Kean
10:30-11:30	Brief history of artificial incubation and hatching	Kean
11:30-12	Personnel management and contracts	Kean
1-2	Incubation of other species	Kean
2-3	Chick servicing	Kean
3-4	Hatchery layout, scheduling, recordkeeping	Kean

Monday

8:30	Respiration of the embryo	Wineland
	Conductance of eggshells	Wineland
	Embryology	Wineland
	Egg Storage	
	Embryology Lab	Wineland / Kean
	Pre-incubation handling of hatching eggs	Wineland

Tuesday

8:30	EXAM 2	
	Physiological requirements for incubation	Wineland
	How to conduct a breakout	Wineland
	Hatch Residue Breakout Lab	Wineland / Kean
	<i>In ovo</i> vaccination	Wineland
	Hydrogen Peroxide and formaldehyde in hatcheries	Wineland

Wednesday

8:30	Thermoregulation	Wineland
	Beak and Toe conditioning	Field
	Post-hatch chick quality	Kean
	Chick Quality Lab	Wineland / Kean

Thursday

8:30	Microbes in the hatchery	Wineland
	Cleaning and disinfection,	Wineland
	Microbiological monitoring	Wineland
	Work on Group Projects / Papers	Students

Friday

8:30 – 9:30	EXAM 3
10 – noon	Student reports, evaluations