

Poultry Products 508 Syllabus

8:00 – 11:30
1:00 – 4:00

WEEK 1

Egg and Egg Products

Eggs (Quality)

Dr. Deana R. Jones
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Eggs (Safety-Microbiology)

Dr. Michael T. Musgrove
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Guest Speakers

WEEK 2

Muscle-Based Products

Dr. Mark P. Richards
University of Wisconsin-Madison
Dept. Animal Sciences-Food Science
Phone: (608) 262-1792
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Guest Speakers

Larry Borchert (Meat industry consultant)
Andy Milkowski (Meat industry consultant)

Office Hours: schedule an individual meeting with each instructor as needed.

Course Description:

- This course will cover the basic principles and technologies involved in producing eggs, egg products and muscle-based products.
- Emphasis will be placed on understanding the role of chemical and physical processes that go into producing a high quality product.
- Students will learn how to quantitatively measure quality attributes of the different products they produce in the laboratory segments.
- An understanding of why a certain ingredient is needed in one product but not another product will be essential. Basic microbiological principles related to product quality and food safety will be described.

Field Trip:

No Jewelry, closed-toe shoes without heels, and pants should be worn during laboratory exercises and Field trips (Fill out security form before trip to Daybreak Foods). T-shirt or long sleeve shirt (no tank tops). Field trips to Brakebush Brothers and Daybreak Foods are scheduled. The tours will serve to introduce students to real world processing technologies in the poultry and meat industry. Time will be allotted to direct questions to the tour guide. No contact with fowl within 72 h of either field trip.

Grading system:

Eggs

Exam 1 25%

Exam 2 25%

Meats

Participation 10%

Exam 20%

Quizzes 10%

Homework 10%

Unexcused absence will require that additional assignments are completed (see instructor).

Grading Scale:

Non-UW-Madison students

A ≥ 90%

B ≥ 80%

C ≥ 70%

D ≥ 60%

F < 60%

UW-Madison students

A ≥ 93%

AB ≥ 88%

B ≥ 83%

BC ≥ 78%

C ≥ 70%

D ≥ 60%

F < 60%

Attendance Policy and Make-up Exams:

Regular attendance is expected of all students. If students are going to miss an exam, prior notice must be given. An alternative arrangement needs to be agreed upon prior to the scheduled exam. A grade of zero will be given for unexcused absences during an exam period.

EGGS SECTION

Monday 18	Tuesday 19	Wednesday 20	Thursday 21	Friday 22
MORNING				
Dr. Deana Jones <ul style="list-style-type: none"> • Egg production and formation • Factors affecting egg quality • Egg defects • Job options* 	Dr. Deana Jones <ul style="list-style-type: none"> • Egg Processing • Invited speaker, USDA, AMS, Poultry programs 	Exam 1 8:00-8:45am Dr. Mike Musgrove <ul style="list-style-type: none"> • Introduction to Microbiology • Egg Microbiology • Micro methods 	Dr. Mike Musgrove <ul style="list-style-type: none"> • Pre-harvest effects • Specialty eggs** • Processing factors • Relative risk of egg-borne disease 	Exam 2 8:00-8:45:am Field Trip Leave dorm at 9:15am Daybreak Foods (Creekwood Complex)
AFTERNOON				
<ul style="list-style-type: none"> • Methods for determine egg quality • Egg processing/laws and requirements 	<ul style="list-style-type: none"> • Quality assessment lab • Review 	<ul style="list-style-type: none"> • Egg shell sampling • Micro procedures 	<ul style="list-style-type: none"> • Completion of egg shell and micro procedures lab • Review 	Field Trip (cont.)

MEATS SECTION

Assignments:

read 1 paper (Tuesday quiz)

1 homework (due Friday 8am)

1 report on Discussions (due Friday 8am)

Time	Mon 25	Tues 26	Wed 27	Thur 28	Fri 29
8:00-8:50	Introduction Poultry Harvest	Debone→Inject→ Tumble (deli loaf)	Food/health discussion	QUIZ 2 Preservation	Meats Exam
9:00-9:50	stun→bleed→scald	Adding moisture Salt & phosphates	Thermal processing Lethality	Curing	Field trip
10:00-10:50	scald→ defeather→eviscerate	Formulate other ingredients Lab and defects	Removing moisture Lab and defects	Oxidation Emulsions & Gelation Lab and defects	Field trip
11:00-11:30	eviscerate→chilling	QUIZ 1 Cranberry discussion	Regulations	Product label exercise Discussions wrap up	Field trip
11:30-1:00	Break	Break	Break	Break	Field Trip
1-3	Distiller Grains Discussion Muscle composition Defects during harvest Layout of Labs	Stuff→cook (deli loaf) Grind thigh muscle →heat→store	<i>Volatile extraction</i> <i>fat extraction</i> (Snack sticks) <i>Volatile analysis</i> <i>Fat analysis</i>	<i>Volatile extraction</i> <i>fat extraction</i> (Hot dogs) <i>Volatile analysis</i> <i>Fat analysis</i>	Take home products (pick up at meat lab from 1-3)
3-4	Packaging 3pm (Reading 1 with possible questions for Tuesday quiz)	Modern processing Cranberry discussion (Homework assignment)	Food/health discussion yield/slice/taste (deli)	Discussions wrap up taste hot dogs	

Boiled Hot Dogs
2 treatments

MSC & bone residue
chicken frames

Rancid MST and
fresh MST

VIDEOS

Broiler Harvest-1980s (Mon)

Broiler Harvest-2000s (Tues)

Breaking down a turkey carcass (Tues)

Mechanically separated poultry (Tues)

Sanitation (Wed)

Turkey breast deli meat (tumbled, elevated pH product) (Tues)

Salami (fermented low pH product) (Wed)

Bologna (emulsified elevated pH product) (Thurs)

Nitrite levels in cured meats and vegetables and health implications

<http://www.youtube.com/watch?v=S3t2TPBcYJI>

Textbooks

No text is required. The texts below are useful references.

- 1) Poultry Meat Processing (Sams, 2001)
- 2) Poultry Products Processing (Barbut, 2002).
- 3) Egg Science and Technology (Stadelman and Cotterill, 1990)