Swine Health & Biosecurity
AnS 384X

Instructor Contact Information:
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Description of Swine Health and Biosecurity Course:
This course will introduce and overview standard biosecurity protocols, identification of disease in pigs and basic treatment administration and prevention methods. To accomplish these goals, there will be a basic introduction to immune system function and basic swine disease transmission and pathobiology. Prerequisite: Basic Swine Science Course.

Justification for Course:
The primary economic constraint to successful swine enterprises continues to be disease. Skill at preventing and mitigating swine disease are critical for employees, managers and owners. A basic understanding of health and biosecurity will allow more efficient use of and interaction with specialized veterinary resources.

Organization:
This course will be delivered via distance education. The nature of the course material dictates that effective communication depends heavily on visual examples. Each module will rely heavily on lecture accompanied by digital photos and rare video clips with total target duration of 30-60 minutes. These lectures will be recorded and posted on Blackboard Learn for students to review.

This course is comprised of 17 modules that will be delivered in a 14-week period. This means that some weeks you will be responsible for more than one module. Each class “week” will begin on Monday morning at 8 a.m. all activities for modules assigned that week will need to be completed by Saturday night at 11:59 p.m. Late submissions of assignments and quizzes will NOT be accepted. This is structured as an introductory level course and no background is assumed or assigned.

Course Objectives:
Upon completion of the course students will be able to:

- Describe standard biosecurity protocols
- Identify behavior and clinical signs of sick and at-risk pigs.
• Describe common treatment administration techniques and their relative value
• Select proper timing and technique for euthanasia of pigs.
• Describe basic routes of disease transmission and appropriate preventions
• Identify normal and abnormal pig anatomy for respiratory and enteric systems
• Describe basic immune system function and manipulation

Assignments
Each module will consist of a recorded lecture, an assignment, and a folder of additional resources. You are expected to watch the lecture and complete the associated assignment each week. Assignments will be brief and are generally designed to stimulate discussion and help me assess what you are learning. The most common assignment type will be discussion topics that you will have to think critically about and register an opinion in the discussion section. Generally, that assessment or interpretation will be submitted via the Discussion Board so that the whole class benefits from the discussion. In some situations, much like real clinical conditions in the field, there are not clearly right or wrong answers. As such, assignments are graded in terms of participation.

Examinations:
Five quizzes, each covering the material in the preceding 3 modules will be used to assess comprehension. Each quiz will be completed on-line and there will not be an additional associated assignment for that module to keep the work load fairly uniform throughout the course. Material in the lectures and assignments as well as any related conversation on the Discussion Board will potentially be covered on the quizzes. Material in the folder of additional resources is for your information and will not be tested for directly although the material is chosen to support and expand the module topic and review of it prior to the quiz might be useful. The quiz format includes short answer and multiple choice questions focused on application of the concepts introduced in the lectures.

Discussion Post Area:
The discussion post area will have a few different threads:

Content Discussion – This is the main discussion area of the course. If you have any questions about assignments, content presented, unrelated topics about swine health and biosecurity, please place them in this area. When you are asked to post a response in an assignment, please do that here as well. The more dialog, the better we all learn so please take time to engage your fellow students here.

Anonymous Feedback – This area will allow you to provide anonymous feedback on the course. If you have concerns and don’t feel comfortable addressing me directly, your feedback can be placed in this area.

News – Sometimes we all come across interesting information and articles about the pork industry. Please use this area to post any news that you think would be beneficial for the entire class. You can also post news about yourself in this area too.
Grading:
2 points for each assignment completed x 10 assignments = 20 points
5 quizzes x 16 points / quiz = 80 points
So, 100 total points available for the course
A = 91 - 100 points
B = 81 – 90 points
C = 71 – 80 points
D = 61-70 points
F = <61 points

Schedule of Swine Health and Biosecurity:

Week 1
Module 0 Topic: Introductions, review of syllabus and philosophy, resolve technical issues
Assignment: Introduce yourself and what you hope to learn from the course

Week 2
Module 1 Topic: Basic respiratory & enteric anatomy - normal versus common lesions
Assignment: How do individual pig lesions present in a population?

Week 3
Module 2 Topic: Normal and sick pig behavior
Assignment: Identifying clinical signs.
Module 3 Topic: Threats to health and homeostasis: Physical, chemical and biologic
Assignment: Quiz 1

Week 4
Module 4 Topic: Disease shedding and transmission
Assignment: Interfering with transmission

Week 5
Module 5 Topic: Immunology and Vaccinology Part 1
Assignment: Swine vaccines
Module 6 Topic: Immunology and Vaccinology Part 2
Assignment: Quiz 2

Week 6
Module 7 Topic: Biosecurity 1: Basic Principles – Risk, dose, segregate, isolate, acclimate
Assignment: What are the risks?
Module 8 Topic: Biosecurity 2: Common Techniques – People, Animals, Transport, Equipment
Assignment: What are the risks?

Week 7
Module 9 Topic: Biosecurity 3: System and National Plans
Assignment: Quiz 3

Week 8
Module 10 Topic: Antimicrobials 1 – Basic Principles, mechanisms of action, delivery techniques
Assignment: What’s your favorite drug?

Week 9
Module 11 Topic: Antimicrobials 2 – Legal and Social Responsibilities, AMDUCA, PQA, FDA, CVM
Assignment: Should we use them at all?
**Week 10**
Module 12 Topic: Farm and Field Diagnostic Investigation
Assignment: Quiz 4

**Week 11**
Module 13 Topic: Zoonotic Diseases – Identification, prevention, communication
Assignment: National News

**Week 12**
Module 14 Topic: Management of the moribund pig
Assignment: Is there a better way?

**Week 13**
Module 15 Topic: Pulling it all together – Real Cases
Assignment: Quiz 5

**Week 14**
Module 16 Topic: Porcine Epidemic Diarrhea Virus (PEDV)
Assignment: