

ANFS 340 – INTRODUCTION TO ANIMAL ENVIRONMENTAL MANAGEMENT

Lecture hours: Mon and Wed 3:35 to 4:25 pm, Townsend Hall 006

Laboratory hours: Fri 2:30 to 4:30 pm, Newton Building 102

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Office Hours: MW 11am-12pm or making an appointment

Course Description

Modern technologies heighten the inexorable links between the animals and their environments, making environmental management more important. This course will discuss the principles of animal environment management related to companion, farm, and research animals. Laboratories are designed to reinforce lecture content by development of hands-on skills using real-world examples.

Two hours of lecture and two hours of laboratory per week. Introduces the art and science of animal husbandry and housing and the essential principles of animal environment control. Students receive hands-on training in the methods required for successful husbandry and management of animals in their environment.

Program Student Learning Outcomes:

1. Students will use critical thinking and reasoning, skeptical inquiry and the scientific approach to solve problems.
2. Students will demonstrate oral communication skills important for communicating scientific ideas.
3. Students will demonstrate written communication skills important for communicating scientific ideas.
4. Students will demonstrate knowledge of the major core concepts in the animal and food sciences.
5. Students will demonstrate an understanding of different perspectives on ethics, values and the roles and use of animals in society. Students will be able to discuss contemporary ethical and moral issues associated with poultry production.

Course Student Learning Outcomes:

1. Students will demonstrate knowledge and of the major core concepts of animal housing and husbandry design and environmental control and management as they apply to different scenarios through quizzes and exams.
2. Students use critical thinking and reasoning, skeptical inquiry and the scientific approach to analyze environmental quality of animals in different environment and utilize appropriate management practices to

improve animal health and wellbeing, environment, mitigate pollutant, and protect natural resources through performing a semester project.

3. Students will demonstrate an understanding of different perspectives on ethics, values and the roles and use of animals in society by comparing the environmental management practices for different animals and discussing contemporary ethical and moral issues associated with animal production and animal research.

4. Students will demonstrate oral communication skills important for communicating scientific ideas by presenting a summary of their group semester project.

5. Students will demonstrate effective writing skills important for communicating scientific ideas by writing a semester project report.

Prerequisites

Math 114 or higher

In addition, you must have proficiency in using the Internet, Microsoft Word, and online Library resources.

Schedule and Assignments

You are responsible for reading and understanding all the documents in the SYLLABUS section of Sakai@udel.edu for this course.

The Calendar and Lecture Outline summarizes the topics of study and assignment deadlines in a week-by-week format. Assignments and grading criteria are listed in the Syllabus and under the ASSIGNMENTS & GRADEBOOK subsections of Sakai@UD. The deadline time for the dates listed will be 11:55PM unless otherwise listed. You are responsible for reading and understanding the Syllabus by the end of the first week of the course.

Lecture Methods

A variety of methods will be used within this course to facilitate and support your learning process. It is expected that before beginning any activities within the Lecture Outline, that you will complete the assigned readings so that you will be familiar with the terms, concepts, and processes within the module. Once readings are completed, you will study other resources and perform other activities within the course and listed in ANNOUNCEMENTS and ASSIGNMENTS subsection of Sakai@UD. You will be expected to participate regularly in all assigned activities and complete discussion and assignments before stated deadlines.

Lecture Assignments:

Throughout the semester there will be reading and several short-term assignments. These will include a scientific paper critique and a written report. Once readings are completed, you will study other resources and perform other activities within the course as listed in ANNOUNCEMENTS and ASSIGNMENTS subsection of Sakai@UD.

Labs:

The labs will require “hands on” experience and thus you are required to dress appropriately and participate. Students should make every effort to arrive on time for each lab.

Lab Participation:

Attendance is mandatory. Participation is essential to the success of this course and it is included in your grade. You will be expected to contribute to the laboratory (25 pts).

Group Work:

You will be assigned to lab groups for most of the course. Your group (as a whole) will be responsible for seeing that activities are completed; however, you will complete some assignments individually. Your activities will be monitored through the use of a log. You should make entries in the log as individuals and you are free to comment as you wish. Decisions on when to work on lab activities should include input from all group members. Remember that all times will not please all members and you should compromise. Tasks should be shared among all group members. If at any time, you feel that your group is not working well together and members are not contributing equally, please contact the instructors immediately.

Textbook:

No textbook is required. Selected readings of scientific papers, extension publications, articles and videos will be used instead and will be available online in Sakai under PDFs and materials and Videos.

Quizzes:

Five quizzes will be given during lectures and labs (15 pts each/75pts total). Only under extenuating circumstances will make up quizzes be administered. You must schedule a make-up quiz BEFORE the regular quiz date (must have advanced notice and written excuse).

Exams:

Exams will consist of two exams and a final. The final will be given during the time designated by the University. Only under extenuating circumstances will make up exams be administered. You must schedule a make-up exam BEFORE the regular exam date (must have advanced notice and written excuse).

Project:

A major part of your grade in this course is determined by a group semester project. Each group (3 to 5 students) will work on a team project. The project topics should be related to animal environmental control and could be from:

- Design a housing system or environmental management technology to improve the health, welfare, or productivity for farm, laboratory, or companion animals
- Evaluate an environmental management technology for farm, laboratory, or companion animals

Each group need to choose a specific subject within one of the areas listed above. Topic should be chosen and submitted by March 11 and approved by the instructor. The report should be double spaced, Arial 12 Font, and be a minimum of 5 pages plus references. The paper must include references and cite references in the paper. For a design project, the report should include detailed information about the species of animal, specific design criteria of the system and technology. For an evaluation project, the group will select an animal system/facility at the UD farm, select an environmental management technology, and collect data

from the facility throughout a period (5 to 7 wks) of time. Each group will weekly collect and evaluate data. At the end of the period, students will organize and synthesize the information and present it both in a group oral presentation and an individual written report.

Project grading (125 points total)

Individual contributions to the group: Students who are present at lab, take an active role in data collection, and are evaluated well by the other group members will receive full credit. (25 pts)

Oral presentation: Groups will informally report to the class the system design or the improvement of the environment by the selected technology. Groups will prepare a report for class and give a 15 minute presentation synthesizing the information they learned throughout the semester. Presentations will focus on the main aspects of their project. Prepare handouts of presentation for classmates and instructor. All team members will receive the same grade. (50 pts).

Report: This report will have a description of the project and the pertinent information collected during the semester. Feel free to use graphs, tables or any other presentation aides. (50 pts)

Academic Dishonesty:

Academic dishonesty of any form will not be tolerated. You are encouraged to become familiar with the University’s Policy of Academic Dishonesty found in the “Student Guide to Policies.” Copies of it may be obtained from the Dean of Students Office, 218 Hullihen Hall. The content of the guide applies to this course.

Disruptive Behavior:

Disruptive behavior, such as talking during lectures, consistent late arrival or early departure, eating, etc., will be the basis for asking a student to leave a class. Persistent disruptive behavior will result in the student being dropped from the class and denied attendance.

Grading

Quizzes	75
Exam #1	75
Exam #2	75
Final Exam	75
Project	125
Oral presentation	50
Written report	50
Individual contributions to the group	25
Lab participation	25
Total	450

Grade percentage: A 93%, A- 90%, B+ 87%, B 84%, B- 81%, C+ 77%, C 74%, C- 70%, D+ 67%, D 64%, D- 60%, F 59%.

Faculty Statement on Disclosures of Instances of Sexual Misconduct:

If, at any time during this course, I happen to be made aware that a student may have been the victim of sexual misconduct (including sexual harassment, sexual violence, domestic/dating violence, or stalking), I am obligated by federal law to inform the university’s Title IX Coordinator. The university needs to know information about such incidents to, not only offer resources, but to ensure a safe campus environment. The Title IX Coordinator will decide if the incident should be examined further. If such a situation is disclosed to me in class, in a paper assignment, or in office hours, I promise to protect your privacy. I will not disclose the incident to anyone but the Title IX Coordinator. For more information on Sexual Misconduct policies, where to get help, and reporting information please refer to www.udel.edu/sexualmisconduct. At UD, we provide 24 hour crisis assistance and victim advocacy and counseling. Contact 302-831-2226, Student Health Services, to get in touch with a sexual offense support advocate.

Lecture and Lab Topics

	Lecture Topics	Lab Topics
1	Introduction to animal environmental management systems.	Visit farm animal facilities and familiar with environment management
2	Animal housing and husbandry system for farm animals	Visit laboratory animal research facilities
3	Animal housing and husbandry system for laboratory research animals	Thermal environment measurement
4	Thermal environment and thermoregulatory physiology.	Application of environmental control: heating and cooling
5	Thermal indices and their applications for animal environments.	Application of environmental control: ventilation
6	Thermal environmental management.	Application of environmental control: integrated system
7	Biological rhythms and photoperiodism	Sound and light environment assessment
8	The air environment	Air quality measurement and determination
9	Environment and animal behavior	Animal behaviors under different environment condition
10	Behavior management and environmental enrichment	Animal environmental enrichment assessment
11	Environment and animal wellbeing	Animal welfare assessment
12	Environment and animal health	Animal waste disposal and treatment
13	Environmental impacts and management of animal waste.	Group project presentations