

ANFS 436/636 – IMMUNOLOGY OF DOMESTIC ANIMALS FALL SEMESTER

Course Description:

ANFS 436 is an elective, undergraduate course in the Department of Animal & Food Sciences. It is offered in FALL semester, simultaneously with the graduate level course, ANFS 636. The course presents a comparative study of the immune systems of domestic and companion animals including dog, cat, horse, pig, cattle, chicken, and others. General topics include the immune system and its components; ontogeny of the immune system; reproductive immunity; neonatal immunity; immunodeficiencies; and autoimmunity. The format of the course is lectures, along with discussions which focus on current immunological topics related to how the immune system protects against various diseases in domestic animals. The discussions are designed to enhance communication skills, as well as to encourage critical and independent thought from the students. (3 CREDITS)

Prerequisites:

BISC 208, or permission of the instructor. Basic knowledge of animal anatomy, structure and function (in relation to the immune tissues) will be useful for this course. The instructor will assume that the students are familiar with this information. An understanding of the immune system and its functions is not required.

Textbook:

“Veterinary Immunology”, 9th edition (2013) by Ian R. Tizard.
Elsevier Saunders, St. Louis, MO 63043
ISBN: 978-1-4557-0362-3

Professor and Office Hours:

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Office Hours :

MW: 11:00 a.m. - 1:00 p.m.; or MTWRF – by appointment

The professor maintains an "open-door" policy. If the scheduled office hours are not suitable, appointments can be made for other days/times (e-mail works best for these arrangements). Drop-in visits are also welcomed.

Course Objectives and Learning Goals:

ANFS 436/636, “Immunology of Domestic Animals” is open to junior- and senior-level undergraduates, as well as graduate students who are interested in the health-related aspects of animals and how animals respond to infection. The specific objectives, with associated learning goals include:

1. To provide an overview of the immune system in domestic animals and explain how the immune system responds to foreign materials, with practical applications in vaccination programs, transplantation, autoimmunity, allergic reactions, and others.
ANFS Learning Goal - "Students will demonstrate knowledge of the major core concepts in the animal and food sciences, specifically in the immune system of animals".
UD Gen. Ed. Goals - "Develop the intellectual curiosity, confidence, and engagement that will lead to lifelong learning" and "Develop the ability to integrate academic knowledge with experiences that extend the boundaries of the classroom".
2. To encourage independent thought and learning through participation in class discussions that are related to current animal immunology topics.
ANFS Learning Goal - "Students will use critical thinking and reasoning, skeptical inquiry and scientific approach to solve problems".
UD Gen. Ed. Goals - "Learn to think critically to solve problems".
3. To enhance the student's communication skills.
ANFS Learning Goal – Students will demonstrate oral and written communication skills important for communicating scientific ideas
UD Gen. Ed. Goal - "Attain effective skills in (a) oral and (b) written communication, (c) quantitative reasoning, and (d) the use of information technology".

NOTE: The University of Delaware's General Education goals can be found at <http://www2.udel.edu/gened/>. The Department of Animal & Food Sciences' mission and learning goals can be found at <http://canr.udel.edu/program-assessment/>.

Course Policies:

1. There will be three lectures scheduled each week (MWF 10:10 AM – 11:00 AM). The class will meet in 009 Townsend Hall. See the course schedule on "Sakai home page" for specific lecture topics that will be presented through the semester.
2. Supplemental readings from the textbook are listed in the lecture outline and preferably, they should be read before you come to class.
3. This course is managed through UD-Sakai (<https://sakai.udel.edu/portal>). The course syllabus, schedule, lecture outline, PowerPoint presentations/handouts, discussion resources, and additional information/web links will be provided through this management system.
4. Attendance is strongly encouraged. Up to 100 points (see grading) will be allotted for 10 quizzes that will be given randomly throughout the semester. Only excused absences will be acceptable for considering a make-up quiz/assignment. See the Official Student Handbook for criteria for an excused absence. In summary, excused absences are religious holidays, medical (with an official medical excuse), athletics, marching band, and a death in the family.
5. Disruptive classroom behavior should be avoided. Please make sure that your cell phone is turned off. Laptops are allowed for viewing PowerPoint slides and taking notes. If you are late for class, enter quietly. Limit conversations with your neighbors. Be considerate of your colleagues in the classroom.

Disability Statement:

Any student who thinks s/he has a need for accommodations based upon the impact of a disability should contact the professor as soon as possible. You should also contact the Office of Disabilities Support Services (240 Academy Street - Alison Hall Suite 119; phone: 302-831-4643; <http://www.udel.edu/DSS/>) to coordinate appropriate accommodations.

Academic Dishonesty:

Academic dishonesty will not be tolerated. All students must be honest and forthright in their academic studies. To steal the works or ideas of another, to cheat on an assignment, or to allow or assist another to commit these acts corrupts the educational process. Students are expected to do their own work and neither give nor receive unauthorized assistance. Any violation of this standard must be reported to the Office of Student Conduct: <http://www.udel.edu/stuguide/14-15/index.html>.

Quizzes:

There will be ten unannounced quizzes throughout the semester. The questions on the quizzes will be based on the 2-3 lectures prior to each quiz or on a related video. Each quiz will count 10 points, with a total of 25% for all quizzes counting toward the final grade. The length of time for each quiz will be 10-15 minutes.

Review Sessions:

The instructor will schedule review sessions prior to each section exam. The review sessions will provide an overview of the chapters to be included in the exam, and then give students an opportunity to ask questions about any materials that were not clearly understood.

Grading:

There are four exams scheduled for this class and each exam is associated with a particular course section (1 - 4). Exams will NOT be comprehensive and they will only cover lecture materials that are included in a particular course section. The final grades will be based on the potential accumulation of 450 points for ANFS 436 and 500 points for ANFS 636, as follows:

COURSE ITEM	ANFS 436	ANFS 636
Exam 1	75	75
Exam 2	75	75
Exam 3	75	75
Exam 4	75	75
Quizzes/Assignments (10 x 10 points each)	100	100
Discussions and ANFS 636 Oral Presentations	-	30
ANFS 636 Written Paper	-	20
TOTAL POINTS	400	450

Grades will not be curved. A grading standard will be used for the final letter grade:

ANFS 436	Grade	ANFS 636	Grade
375 and higher	A	420 or higher	A
358-374	A-	401-419	A-
341-357	B+	382-400	B+
324-340	B	363-381	B
307-323	B-	344-362	B-
290-306	C+	325-343	C+
273-289	C	306-324	C
256-272	C-	287-305	C-
239-255	D+	268-286	D+
222-238	D	249-267	D
205-221	D-	230-248	D-
204 and lower	F	229 and lower	F

ANFS 636 Additional Requirements:

Students registered for ANFS 636 must complete all of the requirements for ANFS 436 (described above). In addition, the students registered for ANFS 636 must also complete the following:

1. **As part of the discussion sessions, each student will select a topic related to immunology in domestic animals and give an oral presentation.** Each student will be required to identify a topic of interest, locate current articles on the topic, and then prepare an oral presentation of the topic to the class. The oral presentation may describe or focus on a specific article related to your topic that you found interesting. Be sure to include in your presentation - an introduction to the topic, methodologies, results, and conclusions, as appropriate. The oral presentation should be 15 minutes in length. Oral presentations will count for 30 points toward your final grade, and they will be scheduled toward the end of the semester.
2. **Submission of a written paper that summarizes your oral presentation.** In addition to the oral presentation, a written paper (minimum of 5 pages in length; double-spaced; and excludes reference list) is required. The written paper should provide a thorough review of your topic (include reference list at the end of paper). In addition, as part of the paper's summary or conclusions, provide your opinion on the topic, in terms of its relevance or significance to animal immunology. The written presentation will count 20 points toward your final grade, and it is due at the end of the semester.