

# VEM5110B Veterinary Hematology and Immunology

SEMESTER: FALL 2021

ANIMAL SYSTEMS I

CREDIT HOURS: 1 CREDIT HOUR

GRADING SYSTEM: A-E GRADING

PHASE: I

## Course Coordinator

Name: Dr. Subhashinie Kariyawasam, DACVM, DACPV, DACVPM, DABMM

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Office Hours: By appointment only

## Course Description

The mammalian blood and immune systems are complicated and still incompletely understood. They are unique organ systems that interface with all other body functions. The cells of the bone marrow and blood as well as many of the molecular components of the blood are essential for sustaining life and protecting against disease. The immune system's main function is to protect the host against diseases. However, in an abnormal state, the immune system can elicit responses that can cause diseases (autoimmunity, hypersensitivity reaction). The responses generated by the immune system are often used as a tool for diagnosis of disease. At the end of the course you will understand the structure and function of blood and blood forming organs, have a working knowledge of basic immunology and understand why this knowledge is essential as a prerequisite for future clinical courses and clinical practice. This knowledge will enable you to interpret and evaluate related problems that you will meet throughout your clinical training and practice.

## Student Learning Outcomes

After successful completion of this course, students will be able to:

1. Differentiate between and describe the differences in morphology and function of the different leukocytes in the blood and bone marrow.
2. Demonstrate a detailed understanding of the anatomy of the immune system and the mechanisms of both innate and adaptive immunity.
3. Demonstrate a working knowledge of common diagnostic tests used to measure clinical immunologic responses such as ELISA.

4. Demonstrate a working knowledge of innate and adaptive immunity in the context of infectious disease, mucosal immunology, cancer immunology, vaccines, autoimmune disease, and transplantation medicine.

## Course Schedule

This weekly schedule contains topics, assignments, and exams. Please refer to Canvas for updates and announcements to any changes to this schedule.

Class meetings will be held in the Lecture Hall A unless otherwise specified.

<i>Date and Time</i>	<i>Topic/Module/Unit</i>	<i>Faculty</i>	<i>SLO # Above</i>	<i>Contact Hours</i>
08-23-2021 10:30-11:20am	Module 1 Introduction & Plasma Proteins	Lanier	1	1.0
08-23-2021 11:30-12:20pm	Module 2 Mammalian Hematopoiesis	Lanier	1	1.0
08-25-2021 10:30-11:20am	Module 3 Erythrocyte Structure & Function	Lanier	1	1.0
08-25-2021 11:30-12:20pm	Module 4 Erythrocyte Structure & Function	Lanier	1	1.0
08-27-2021 10:30-11:20am	Module 5 Hemostasis	Lanier	1	1.0
08-27-2021 11:30-12:20pm	Module 6 Hemostasis	Lanier	1	1.0
08-30-2021 10:30-11:20am	Module 7 Leukocyte Morphology and Function	Lanier	1	1.0
08-30-2021 11:30-12:20pm	Module 8 Blood Film Examination	Lanier	1	1.0
08-31-2021	Hematology Quiz (Modules 1-8) Online via Canvas (64 points)	Lanier	1	0.0
09-01-2021 10:30-11:20am	Module 9 Functional Anatomy of the Immune System	Kariyawasam	2	1.0
09-01-2021 11:30-12:20pm	Module 10 Innate versus Adaptive Immunity	Kariyawasam	2	1.0
09-07-2021 9:30-10:20am	Module 11 Macrophages & Granulocytes	Kariyawasam	2	1.0
09-07-2021 10:30-11:20pm	Module 12 Antibody & Antigen Interaction (Ig Isotypes; Immunogens)	Kariyawasam	2	1.0
09-09-2021 9:30-10:20am	Module 13 Antibody & Antigen Interaction	Kariyawasam	2	1.0
09-09-2021 10:30-11:20pm	Module 14 Generation of Antibody Diversity & B Cell Maturation	Kariyawasam	2	1.0
09-13-2021 10:30-11:20am	Module 15 Generation of TCR Diversity & T Cell Maturation	Kariyawasam	2	1.0
09-13-2021 11:30-12:20pm	Module 16 Antigen Processing and Presentation	Kariyawasam	2	1.0

<i>Date and Time</i>	<i>Topic/Module/Unit</i>	<i>Faculty</i>	<i>SLO # Above</i>	<i>Contact Hours</i>
09-14-2021 10:30-11:20am	Module 17 MHC & TCR Antigen Recognition	Kariyawasam	2	1.0
09-14-2021 11:30-12:20pm	Module 18 MHC presentation in BCR Antigen Recognition	Kariyawasam	2	1.0
09-16-2021 09:30-10:20am	Module 19 Cytokines	Sahay	2	1.0
09-16-2021 10:30-11:20pm	Module 20 Cytokine Therapy Online via Canvas (8 points)	Sahay/Kariyawasam	4	1.0
09-17-2021 10:30-11:20am	Module 21 Cell Effector Mechanisms	Kariyawasam	2	1.0
09-17-2021 11:30-12:20pm	Module 22 Passive Immunity	Kariyawasam	2	1.0
09-20-2021 10:30-11:20am	Module 23 Immunodeficiencies	Kariyawasam	4	1.0
09-20-2021 11:30-12:20pm	Module 24 Complement in Immunity	Crawford	2	1.0
09-23-2021 10:30-11:20pm	Module 25 Inflammation	Kariyawasam	2, 4	1.0
09-23-2021 11:30-12:20pm	Clinical Case Discussion	Kariyawasam	2, 4	1.0
09-24-2021 9.30-10:20am	Quiz (Modules 9-25) Online via Canvas or Lecture Hall A (56 points)		2, 4	0.0
09-24-2021 10:30-11:20am	Module 26 Mucosal Immunity	Nguyen	4	1.0
09-24-2021 11:30-12:20pm	Module 27 Tolerance and Autoimmunity	Nguyen	4	1.0
09-27-2021 10:30-11:20am	Module 28 Tumor Immunology and Immunotherapy	Milner	4	1.0
09-27-2021 11:30-12:20pm	Module 29 Hypersensitivity I and II	Kariyawasam	4	1.0
09-28-2021 10:30-11:20am	Module 30 Hypersensitivity III and IV	Kariyawasam	4	1.0
09-28-2021 11:30-12:20pm	Module 31 Vaccines	Kariyawasam	4	1.0
09-29-2021 10:30-11:20am	Module 32 Concepts in Immunodiagnostics I	Crawford	3	1.0
09-29-2021 11:30-12:20pm	Module 33 Concepts in Immunodiagnostics II	Crawford	3	1.0
10-04-2021 10:30-11:20am	Module 34 Immunity to Infectious Diseases	Kariyawasam	4	1.0
10-04-2020 11:30-12:20pm	Module 35 Transplantation Immunology	Kariyawasam	4	1.0
10-05-2021 10:30-11:20am	Clinical Case Discussion	Kariyawasam	2, 4	1.0

<i>Date and Time</i>	<i>Topic/Module/Unit</i>	<i>Faculty</i>	<i>SLO # Above</i>	<i>Contact Hours</i>
10-05-2020 11:30-12:20pm	Clinical Case Discussion	Kariyawasam	2, 4	1.0
10-07-2021 10:30-12:20pm	Review	Kariyawasam	2-4	2.0
10-11-2021 8:00-10:00am	Final Exam (Computer Lab) (148 points)	Kariyawasam	2-4	0.0
		Total		40

## Required Textbooks and/or Course Materials

None

## Recommended Textbooks and/or Course Materials

"*Veterinary Immunology: An Introduction*". Ian Tizard. W.B. Saunders Company, Philadelphia, 2018, 10th Edition.

## Methods of Evaluation

Grades will be calculated based on the following:

Hematology Quiz	24 % (64 points)
Mid-course Quiz	20 % (56 points)
Assignment for Module 20 Cytokine Therapy	2 % (8 points)
Final Exam	54 % (148 points)
Total	100 % (272 points)

Note: Late assignments will not be accepted.

## Grading Scheme

Course grades will be assigned based on the following grading scheme. This grading scale is **final**.

The grade percentage to 2 decimal places will be given to the coordinator of Animal Systems I for inclusion in the combined Animal Systems I grade.

## Course Policies

Excused absences for religious holidays and family/personal emergencies must be reported to ASA and instructor as soon as possible.

## Curriculum Policies

DVM curriculum policies are consistently held and reinforced across all DVM courses. Please visit the DVM webpage and review the curriculum policies listed within the [Online Student Handbook](#).

## Students with Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting [www.disability.ufl.edu/students/get-started](http://www.disability.ufl.edu/students/get-started). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester. **Students in UF Health Sciences programs should be mindful that unique course accommodations may not be applicable in a clinical, fieldwork or practicum setting. Thus, planning a semester in advance with the DRC Health Sciences Learning Specialist, Lisa Diekow [ldiekow@ufsa.ufl.edu](mailto:ldiekow@ufsa.ufl.edu) , is highly encouraged.**

The DRC is located on the main UF campus. ASA (Office for Academic and Student Affairs) works closely with the DRC to ensure student accommodations are met in the classroom and during exams. Melissa Pett in ASA assists in coordinating exams and meeting recommended disability-related requirements for students with accommodations ([melissacox@ufl.edu](mailto:melissacox@ufl.edu)).

## Course and Instructor Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available on the [GatorEvals Webpage](#). Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via the [Online Platform](#). Summaries of course evaluation results are available to students at the [GatorEvals Public Results Webpage](#).

# Appendix A: Faculty Lecturers

Faculty: Subhashinie Kariyawasam (**Course Coordinator**)

E-mail: [skariyawasam@ufl.edu](mailto:skariyawasam@ufl.edu)

Faculty: Chris Lanier

E-mail: [cjlanier88@ufl.edu](mailto:cjlanier88@ufl.edu)

Faculty: Bikash Sahay

E-mail: [sahayb@ufl.edu](mailto:sahayb@ufl.edu)

Faculty: Cynda Crawford

E-mail: [crawfordc@ufl.edu](mailto:crawfordc@ufl.edu)

Faculty: Cuong Nguyen

E-mail: [nguyenc@ufl.edu](mailto:nguyenc@ufl.edu)

Faculty: Rowan Milner

E-mail: [milnerr@ufl.edu](mailto:milnerr@ufl.edu)

# Appendix B: Other Information