UNIVERSITY of NICOSIA

Year 2

Course Title	**Veterinary Immunology**				
Course Code	**VET-208**				
Course Type	Required				
Level	Undergraduate				
Year / Semester	Year 2/ Semester 2 (Spring)				
Teacher's Name	**Course Lead:** Dr. Eleni Gentekaki **Contributor**: Dr. Georgios Nikolaou				
ECTS	6	Lectures / week	3	Tutorials / week	1
Course Purpose and Objectives	The main objectives of the course are: ● Introduce students to the basic principles of immunology ● Discuss the immune mechanisms of healthy and diseased animals ● Familiarize students with basic techniques used in immunology				
Learning Outcomes	Week 1 **LOBs covered during lectures:** 1. Discuss the history and milestones of immunology 2. Describe what is the immune system 3. Explain what is meant by immune response 4. Distinguish between innate and acquired immunity 5. Describe the cells of the immune system, their origin and function Week 2 **LOBs covered during lectures:** 6. Describe the primary and secondary lymphoid tissues and their functions 7. Compare the primary and secondary lymphoid tissues Week 3 **LOBs covered during lectures:** 8. Explain the production of cytokines and their functions 9. Discuss toll-like receptors and their functions 10. Describe the barriers to innate immunity to infection 11. Describe the recognition of microbes by cells of the innate immune system 12. Discuss phagocytosis in detail Week 4 **LOBs covered during lectures:** 13. Define complement system 14. Explain the three complement pathways in some detail				

15. Discuss the function of the complement system
16. Explain what the major histocompatibility complex is
17. Distinguish between MHC class I and MHC II
18. Explain the role of MHC in transplant rejection
19. Describe the different types of antigen presenting cells
20. Discuss the link between antigen processing, presentation and immune response

Week 5

LOBs covered during lectures:

21. List the important surface molecules of T lymphocytes
22. Discuss the functions of the surface molecules of T lymphocytes
23. Outline T cell receptor structure and assembly
24. Explain what is meant by intra-thymic positive and negative selection
25. Describe T-cell activation
26. Describe the T cell differentiation into subsets

Week 6

LOBs covered during lectures:

27. Explain the function of B lymphocytes
28. Describe the basic structure of the B cell receptor
29. Describe the five classes of immunoglobulins, their structure and functions
30. Describe B cell activation
31. Explain what is meant by clonal expansion

Week 7

LOBs covered during lectures:

32. Realize the different processes underlying recognition of the same antigen by B and T cells
33. Discuss humoral immunity
34. Define immunological memory
35. Discuss cell-mediated immune response

Week 8

LOBs covered during lectures:

36. Define autoimmunity
37. Discuss autoimmune diseases in some detail
38. Describe the mechanisms of tissue damage in autoimmunity (hypersensitivity reactions I, II, III, IV)

Week 9

LOBs covered during lectures:

39. Realize why regulation of the immune response is needed
40. Outline the means by which immune response regulation occurs
41. Describe the immune response against infectious agents
42. Explain how pathogens evade the immune system using specific examples

	Week 10 **LOBs covered during lectures:** 43. Realize that fetal animals can mount immune responses 44. Discuss the development of immune responses in newborn animals 45. Explain the transfer of immunity from mother to offspring Week 11 **LOBs covered during lectures:** 46. Explain specific techniques used in immunology Week 12 **LOBs covered during lectures** **47.** Discuss the different types of immunization procedures 48.		
Prerequisites	None	Required	None
Course Content	**Lecture Topics:** • History of immunology • Cells of the immune system • Primary and secondary lymphoid tissues • Cytokines and their functional roles • Phagocytic cells and phagocytosis • Complement system, its types and roles • Major histocompatibility complex • Antigen presenting cells • Humoral immune response • Cell-mediated immune response • Immune cell activation • Autoimmunity and suppression • Immune system against pathogens • Immunization • Immunological techniques		
Teaching Methodology	Lecture based learning and small group tutorials sessions		
Bibliography	1. Veterinary Immunology An Introduction TIZARD 2. Immunology KUBY 3. Basic Veterinary Immunology 4. Janeway's Immunobiology 8 th edition		
Assessment	Attendance: 10%; Coursework: 30%; Final exam: 60%		
Language	English		