

Course Title	<b>Introduction to Pathology and Systems Medicine I</b>				
Course Code	<b>VET-206</b>				
Course Type	Required				
Level	Undergraduate				
Year / Semester	Year 2/ Semester 2 (Spring)				
Teacher's Name	<b>Course Lead:</b> Dr Daphne Mavrides and Dr Georgios Nikolaou <b>Contributors:</b> Prof Michael Herrtage				
ECTS	6	Lectures / week	3	Practicals and tutorials / week	2
Course Purpose and Objectives	<p><b>The main objectives of the course are:</b></p> <ul style="list-style-type: none"> <li>• <b>Introduction to Pathology</b> To teach the students the basic principles of pathology and medical imaging</li> <li>• <b>Gastroenterology</b> the aim of this part of the course is to familiarize the student with diseases of the various parts of the gastrointestinal tract in small animals. The student will learn to identify symptoms of gastrointestinal disorders, describe the appropriate diagnostic tests available, identify the cause of the disease and describe the treatment.</li> <li>• <b>Hepatobiliary</b> the aim of this part of the course is to familiarize the student with diseases of the hepatobiliary system in small animals. The student will learn to identify symptoms of gastrointestinal disorders, describe the appropriate diagnostic tests available, identify the cause of the disease and describe the treatment.</li> <li>• <b>Respiratory system</b> the aim of this part of the course is to familiarize the student with diseases of the respiratory system in small animals. The student will learn to identify symptoms of respiratory disorders, describe the appropriate diagnostic tests available, identify the cause of the disease and describe the treatment.</li> </ul>				
Learning Outcomes	<p>The following list provides the learning objectives that will be covered in the lectures, lab practical sessions and tutorials of each week:</p> <p><a href="#">Week 1</a></p> <p><b>LOBs covered during lectures:</b></p> <p><b>Introduction to pathology and medical Imaging</b></p> <ol style="list-style-type: none"> <li>1. Describe the language of Pathology and Medical Imaging.</li> <li>2. Discuss necrosis: Morphology and Mechanisms</li> <li>3. Discuss apoptosis: Programmed Cell Death</li> <li>4. Explain cellular Responses to Injury</li> <li>5. Explain metabolic overload</li> <li>6. Describe amyloid</li> </ol>				

7. Describe calcification
8. Describe pigments
9. Describe Crystals
10. Describe Inflammation – overview
11. Explain clinical Signs and Lesions
12. Describe the pathogenesis and systemic signs of Acute Inflammation
13. Describe the chemical Mediators of Inflammation
14. Describe the basics of X-Ray imaging.
15. Describe the basics of CT imaging.

#### Week 2

##### **LOBs covered during lectures:**

16. Describe chronic inflammation
17. Describe wound healing and regeneration
18. Explain angiogenesis
19. Explain fibrosis
20. Describe epithelialization
21. Describe haemostasis and thrombosis
22. Describe the prevention of coagulation by normal endothelium
23. Describe platelet aggregation
24. Describe blood coagulation
25. Describe thrombosis
26. Discuss haemodynamic disorders
27. Discuss cardiovascular disease and its consequences
28. Explain oedema
29. Describe haemorrhage
30. Describe what shock is
31. Describe infarction
32. Describe embolism
33. Explain collateral and compensatory circulation
34. Describe vascular shunts and fistulae
35. Describe lymphatic blockage
36. Explain ischemia
37. Describe the basic nuclear medicine imaging modalities (PET, SPECT, GAMMA CAMERA)

#### Week 3

##### **LOBs covered during lectures:**

38. Describe neoplasia - Benign vs Malignant
39. Describe the spread, host responses and genetics of cancer
40. Discuss the spread of neoplasms
41. Describe the clinical effects of neoplasms
42. Discuss restraint of neoplastic growth
43. Describe the cancer cell
44. Discuss causes of cancer
45. Chemical carcinogens
46. Viral oncogenesis
47. Physical agents associated with neoplasms
48. Describe the basics of M.R. imaging.

#### Week 4

**LOBs covered during lectures:**

49. Describe defects in adaptive immunity
50. Describe hypersensitivity disease
51. Describe auto immune disease
52. Discuss genetic disorders and teratology
53. Describe infectious diseases
54. Discuss viral disease
55. Discuss Bacterial disease
56. Discuss fungal and algal diseases
57. Explain the pathology of parasitism
58. Explain nutritional and metabolic disease
59. Discuss aging

**Week 5**

**LOBs covered during lectures:**

**Gastroenterology:**

60. Clinical manifestations of gastrointestinal disorders
61. Diagnostic tests for the alimentary tract
62. Laboratory evaluation
63. Faecal evaluation
64. Radiography of the GI tract
65. Ultrasonography of the GI tract
66. Endoscopy and biopsy
67. Digestion and absorption tests
68. General therapeutic principles

**Week 6**

**LOBs covered during lectures:**

69. Disorders of the oral cavity, pharynx and oesophagus
70. Feline eosinophilic granuloma
71. Oesophagitis
72. Hiatal hernia
73. Oesophageal obstruction
74. Disorders of the stomach
75. Gastritis
76. Gastric foreign objects
77. Gastric dilatation volvulus
78. Gastrointestinal ulceration
79. Neoplasms

**Week 7**

**LOBs covered during lectures:**

80. Disorders of the intestinal tract
81. Acute diarrhoea
82. Canine parvo viral enteritis
83. Feline parvoviral enteritis
84. Canine coronaviral enteritis
85. Feline coronaviral enteritis
86. Feline leukaemia virus
87. Feline immunodeficiency virus

- 88. Bacterial diseases
- 89. Alimentary track parasites
- 90. Worms
- 91. Coccidiosis
- 92. Giardiasis

#### Week 8

##### **LOBs covered during lectures:**

- 93. Exocrine pancreas insufficiency
- 94. Malabsorptive diseases
- 95. Protein losing enteropathy
- 96. Irritable bowel disease
- 97. Intestinal obstruction
- 98. Linear foreign body
- 99. Intussusception
- 100. Neoplasms
- 101. Constipation
- 102. Disorders of the peritoneum

#### Week 9

##### **LOBs covered during lectures:**

##### **Hepatobiliary system**

- 103. Clinical manifestation of hepatobiliary disease
- 104. Diagnostic tests for the hepatobiliary system
- 105. Laboratory tests
- 106. Diagnostic imaging
- 107. Liver biopsy
- 108. Hepatobiliary diseases in the **Cat**
- 109. Hepatic lipidosis
- 110. Biliary tract disease
- 111. Portosystemic shunt
- 112. Hepatobiliary infections
- 113. Hepatobiliary diseases in the **Dog**
- 114. Hepatitis
- 115. Biliary tract disorders
- 116. Portosystemic shunt
- 117. Treatment of complications of hepatic disease and failure
- 118. Hepatic encephalopathy
- 119. Portal hypertension

#### Week 10

##### **LOBs covered during lectures:**

##### **Respiratory system**

- 120. Clinical manifestation of nasal disease
- 121. Diagnostic tests for the nasal cavity and paranasal sinuses
- 122. Diagnostic imaging
- 123. Rhinoscopy
- 124. Nasal biopsy
- 125. Feline Upper respiratory infection
- 126. Bacterial rhinitis
- 127. Nasal mycoses

	<p>128. Allergic rhinitis  129. Diagnostic tests for the larynx and pharynx  130. Laryngeal paralysis  131. Brachycephalic airway syndrome  132. Obstructive laryngitis</p> <p><b>Week 11</b></p> <p><b>LOBs covered during lectures:</b></p> <p>133. Disorders of the trachea and bronchi  134. Canine infectious tracheobronchitis  135. Feline bronchitis  136. Collapsing trachea  137. Disorders of the pulmonary parenchyma and vasculature  138. Pneumonia  139. Toxoplasmosis  140. Aspiration pneumonia  141. Pulmonary neoplasia  142. Pulmonary hypertension  143. Pulmonary thromboembolism  144. Pulmonary oedema</p> <p><b>Week 12</b></p> <p><b>LOBs covered during lectures:</b></p> <p>145. Mediastinal diseases  146. Pneumothorax  147. Pneumomediastinum  148. Disorders of the pleural cavity  149. Pyothorax  150. Chylothorax  151. Airway obstruction  152. Oxygen supplementation</p>		
Prerequisites	None	Required	None
Course Content	<ul style="list-style-type: none"> <li>• <b>Introduction to pathology and medical imaging:</b> Injury, Inflammation, necrosis, wound healing, haemostasis and thrombosis, coagulation, shock, neoplasia, the cancer cell, causes of cancer, immunologic disorders, genetic disorders, infectious diseases, aging, radiography, CT, SPECT, PET, Gamma Camera, MRI.</li> <li>• <b>Gastroenterology:</b> normal anatomy and physiology of the gastrointestinal system, clinical manifestations of disorders, diagnostic techniques and their interpretation, understanding of the drugs used in the treatment of gastrointestinal disorder.</li> <li>• <b>Hepatobiliary:</b> normal anatomy and physiology of the hepatobiliary system, clinical manifestations of disorders, diagnostic techniques and their interpretation, understanding of the drugs used in the treatment of hepatobiliary disorder.</li> <li>• <b>Respiratory system:</b> normal anatomy and physiology of the respiratory system, clinical manifestations of disorders, diagnostic techniques and their interpretation, understanding of the drugs used in the treatment of respiratory disorder.</li> </ul>		

Teaching Methodology	Lecture based learning, practical sessions for each thematic area and tutorials.					
Bibliography						
	<b>Authors</b>	<b>Title</b>	<b>Edition</b>	<b>Publisher</b>	<b>Year</b>	<b>ISBN</b>
	<b>Pathology</b>					
	J.F. Zachary and D.M. McGavin	Pathologic Basis of Veterinary Disease	4th	Mosby Elsevier	2007	978-0323028707
	Michael Day	Clinical immunology of the dog and cat	2nd	CRC Press	2011	978-1840761719
	K.V.F Jubb, P.C. Kennedy, N. Palmer	Pathology of Domestic Animals	6th	Saunders	2015	978-0702053221
	Kenneth S. Latimer	Duncan and Prasse's Veterinary Laboratory Medicine: Clinical Pathology	5th	Wiley-Blackwell	2011	978-0813820149
	<b>Systems Medicine I</b>					
	Edward Hall, James W. Simpson, David A. Williams	BSAVA Manual of Canine and Feline Gastroenterology	2nd	BSAVA	2005	978-0905214733
	Virginia Luis Fuentes, Lynelle Johnson, Simon Dennis	BSAVA Manual of Canine and Feline Cardiorespiratory Medicine	2nd	BSAVA	2010	978-1905319534
	Elizabeth Villiers and Jelena Ristić	BSAVA Manual of Canine and Feline Clinical Pathology	3rd	BSAVA	2016	978-1910443255
	WSAVA Liver Standardiz	WSAVA Standards for Clinical and	1st	Saunders	2006	978-0702032776

	ation Gr; Robert J. Washabau ; John M. Cullen; Jennifer A. Charles; Jan Rothuiz	Histological Diagnosis of Canine and Feline Liver Diseases				
	Stephen J. Ettinger, Edward C. Feldman, Etienne Cote	Textbook of Veterinary Internal Medicine Expert Consult	8th	Saunders	2016	978- 03233121 10
	Jorg M. Steiner	Small Animal Gastroenterology	1st	Schlütersche	2008	978- 38999302 76
	Robert J. Washabau , Michael J. Day	Canine and Feline Gastroenterology	1st	Saunders	2012	978- 14160366 16
Assessment	Participation 10%, course assignment 30% and final exam 60%					
Language	English					