

Course Title	<b>Small animal practice: Orthopedics, Soft tissue Surgery, Infectious Diseases and Differential Diagnosis</b>				
Course Code	<b>Vet-408</b>				
Course Type	Required				
Level	Undergraduate				
Year / Semester	Year 4/ Semester 2 (Spring)				
Teacher's Name	<b>Course Lead:</b>  <b>Contributor:</b>				
ECTS	9	Lectures / week	3	Practicals and sessions / week	2
Course Purpose and Objectives	<p>The main objectives of the course are:</p> <ul style="list-style-type: none"> <li> <b>Orthopedics:</b> To produce a graduate able to identify and treat the common conditions that cause lameness and orthopedic disease in the dog and cat and be able to apply orthopedic principles to new situations using a problem solving approach. To produce a graduate with a good general knowledge of fracture repair techniques and implants and ability to recognize when fractures need stabilization, which fractures are amenable to conservative treatment and which would benefit from surgical repair. To produce a graduate with an ability to develop postoperative and conservative treatment plans for canine and feline patients with acute and chronic orthopedic conditions.         </li> <li> <b>Soft tissue surgery:</b> To produce a graduate that is able to understand the surgical anatomy for basic, common soft tissue surgical conditions; to understand the value of good history taking and clinical examination skills in order to establish differential diagnoses for soft tissue conditions affecting each body system and be able to use this to establish a diagnostic and therapeutic approach; to be able to recognize common soft tissue emergencies and formulate effective diagnostic and treatment protocols; to understand the pathogenesis of soft tissue conditions affecting the urinary, reproductive, gastrointestinal, respiratory and integument systems; to understand the surgical         </li> </ul>				

	<p>indications for conditions affecting each body system and be able to discuss appropriate surgical techniques; to be able to discuss complications of the surgical techniques described; to appreciate anesthesia requirements and protocols for small animal surgery.</p> <ul style="list-style-type: none"> <li>• <b>Infectious diseases</b> the students will learn the laboratory diagnosis of infectious diseases, the antimicrobial therapy, prevention and control of infectious diseases and common infectious diseases in small animals</li> <li>• <b>Differential Diagnosis</b> to teach the students to use the differential diagnosis list and learn how to effectively use this important aspect of problem-oriented approach to clinical diagnosis</li> </ul>
<p>Learning Outcomes</p>	<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>Orthopedics</b></p> <ol style="list-style-type: none"> <li>1. Taking historical information</li> <li>2. Orthopedic Examination</li> <li>3. Diagnostic Tools</li> <li>4. Causes of lameness in the dog</li> <li>5. Classification of fractures: causal factors, External wound, location, morphology and severity</li> <li>6. Blood supply and healing of bone</li> <li>7. Diagnosis of fractures</li> <li>8. Principles of treatment of fractures</li> <li>9. Open fractures classification</li> <li>10. Treatment</li> <li>11. Emergency treatment</li> <li>12. Definitive surgical treatment</li> <li>13. Closed reduction</li> <li>14. Open reduction</li> <li>15. Immobilization</li> <li>16. Methods of fixation</li> <li>17. Temporary splintage</li> <li>18. Coaptation splints and casts</li> <li>19. Selection of fixation method</li> </ol> <p><a href="#">Week 2</a></p> <p><b>LOBs covered during lectures:</b></p>

20. External skeletal fixation
21. Indications
22. Components of external fixator
23. Complications
24. Removal of frames
25. Intermedullary pins
26. Cerclage wire – indications and technique
27. Bone plates application and removal
28. Choice of fixation
29. Bone grafting indications and characteristics
30. Delayed union
31. Nonunion
32. Treatment of acute bone infections
33. Treatment of chronic bone infections
34. Structure function, classification and components of joints (revision)
35. Treatment options
36. Principles of joint surgery
37. Arthroscopy in joint surgery

### Week 3

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

38. Fractures of the scapula
39. Fractures of the humerus
40. Fractures of the radius and ulna
41. Fractures of the carpus, metacarpus and phalanges
42. Fractures of the pelvis
43. Fractures of the femur and patella
44. Fractures of the tibia and fibula
45. Fractures of the tarsus, metatarsus and phalanges
46. Fractures and luxations of the mandible and maxilla
47. Fractures in growing animals
48. Correction of abnormal bone growth and healing
49. Panosteitis
50. Secondary nutritional hyperparathyroidism
51. Hypertrophic osteodystrophy

#### **Orthopedic practicals**

52. Observation of gait and lameness in a dog
53. Practice of an orthopedic examination on a dog
54. Standing palpation
55. Recumbent examination
56. Practice in performing a radiographic examination (x-ray)
57. Practice of placing coaptation splints and casts on a dog

### Week 4

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

**Soft tissue surgery:**

Surgery of the skin

- 58. Primary wound closure
- 59. Lumpectomy and Primary Closure
- 60. Basic Flaps
- 61. Tension-Relieving Incisions
- 62. Full-Thickness Mesh Grafts
- 63. Caudal Superficial Epigastric Axial Pattern Flap
- 64. Mastectomy
- 65. Tie-over Bandage

Abdominal Procedures

- 66. Abdominal Incisions
- 67. Umbilical Hernia
- 68. Inguinal Hernia
- 69. Diaphragmatic Hernia
- 70. Splenectomy
- 71. Abdominal Lymph Node Biopsy
- 72. Peritonitis

**Week 5****LOBs covered during lectures:**

Surgery of the Digestive System

- 73. Liver biopsy
- 74. Pancreatic Biopsy
- 75. Gastrotomy
- 76. Gastrostomy Tube Placement
- 77. Incisional Gastropexy
- 78. Intestinal Biopsy
- 79. Intestinal Foreign Bodies
- 80. Intestinal Resection and Anastomosis
- 81. Enterostomy Tube Placement
- 82. Colopexy
- 83. Rectal Polyp Resection

Surgery of the Reproductive Tract

- 84. Prepubertal Gonadectomy
- 85. Feline Castration
- 86. Canine Castration
- 87. Cryptorchid Castration
- 88. Prostatic Biopsy
- 89. Prostatic Omentalization
- 90. Ovariohysterectomy
- 91. Cesarean Section
- 92. Pyometra
- 93. Episiotomy
- 94. Episiotomy

**Week 6**

**LOBs covered during lectures:**

Surgery of the Urinary Tract

95. Renal Biopsy
96. Nephrectomy
97. Cystotomy
98. Cystostomy Tube Placement
99. Prescrotal Urethrotomy
100. Scrotal Urethrostomy
101. Perineal Urethrostomy in Cats
102. Urethral Prolapse

Perineal Procedures

103. Anal Saccullectomy
104. Perineal Hernia
105. Rectal Prolapse
106. Tail Amputation

Surgery of the Head and Neck

107. Oronasal Fistulas
108. Lateral Ear Canal Resection
109. Vertical Ear Canal Resection
110. Mandibular Lymph Node Excision
111. Sialoceles
112. Stenotic Nares
113. Elongated Soft Palate
114. Tracheostomy Tube Placement
115. Esophagostomy Tube Placement
116. Feline Thyroidectomy

**Week 7****LOBs covered during lectures:****Infectious diseases**

117. Laboratory diagnosis of infectious diseases
118. Practical antimicrobial chemotherapy
119. Prevention and control of infectious diseases
120. Vaccination protocols
121. Poly systemic bacterial diseases
122. Leptospirosis
123. Mycoplasma
124. Borreliosis
125. Brucellosis
126. Tetanus
127. Poly systemic rickettsial diseases
128. Ehrlichiosis
129. Rocky mountain spotted fever
130. Poly systemic viral diseases
131. Canine parvovirus
132. Canine distemper virus
133. Canine parainfluenza virus and adenovirus 2

**Week 8****LOBs covered during lectures:**

134. Canine oral papilloma virus
135. Feline corona virus
136. Feline immunodeficiency virus (FIV)
137. Feline leukemia virus (FeLV)
138. Feline calicivirus
139. Feline herpes virus
140. Feline parvovirus
141. Rabies
142. Poly systemic mycotic infections
143. Cryptococcosis
144. Candidiasis
145. Poly systemic protozoal infections
146. Toxoplasmosis
147. Babesiosis
148. Giardia
149. Hepatozoon
150. Leishmania

**Week 9****LOBs covered during lectures:****Differential Diagnosis****Historical signs**

Systemic and metabolic

151. Principles of differential diagnosis-
152. Polyuria/polydipsia
153. Weight loss
154. Weight gain
155. Polyphagia
156. Anorexia/inappetence
157. Failure to grow
158. Syncope/collapse
159. Weakness

Gastrointestinal/abdominal

160. Ptyalism/salivation/hypersalivation
161. Gagging/retching
162. Dysphagia
163. Regurgitation
164. Vomiting
165. Diarrhoea
166. Melaena
167. Haematemesis
168. Haematochezia
169. Constipation/obstipation

170. Faecal tenesmus/dyschezia

171. Faecal incontinence

172. Flatulence/borborygmus

Cardiorespiratory

173. Coughing

174. Dyspnea/tachypnea

175. Sneezing and nasal discharge

176. Epistaxis

177. Haemoptysis

178. Exercise intolerance

Week 10

**LOBs covered during lectures:**

Dermatological

179. Pruritus

Neurological

180. Seizures

181. Trembling/shivering

182. Ataxia/conscious proprioceptive deficits

183. Paresis/paralysis

184. Coma/stupor

185. Altered behavior – general changes

186. Altered behavior – specific behavioral problems

187. Deafness

188. Multifocal neurological disease

Ocular

189. Blindness/visual impairment

190. Epiphora/tear overflow

Musculoskeletal

191. Forelimb lameness

192. Hind limb lameness

193. Multiple joint/limb lameness

Reproductive

194. Failure to observe oestrus

195. Infertility in the female with normal oestrus

196. Male infertility

197. Vaginal/vulval discharge

198. Abortion

199. Dystocia

200. Neonatal mortality

Urological

201. Pollakiuria/dysuria/stragnuria

202. Polyuria/polydipsia

203. Anuria/oliguria

204. Hematuria

205. Urinary incontinence/inappropriate urination

[Week 11](#)

**LOBs covered during lectures:**

**Physical signs**

General

206. Abnormalities of body temperature – hyperthermia

207. Abnormalities of body temperature – hypothermia

208. Enlarged lymph nodes

209. Diffuse pain

210. Peripheral oedema

211. Hypertension

212. Hypotension

Gastrointestinal/abdominal physical signs

213. Oral lesions

214. Abdominal distension

215. Abdominal pain

216. Perianal swelling

217. Jaundice

218. Abnormal liver palpation

Cardiorespiratory

219. Dyspnea/tachypnoea

220. Pallor

221. Shock

222. Cyanosis

223. Ascites

224. Peripheral oedema

225. Abnormal respiratory sounds

226. Abnormal heart sounds

227. Abnormalities in heart rate

228. Jugular distension/positive hepatojugular reflux

229. Jugular pulse components

230. Alterations in arterial pulse

[Week 12](#)

**LOBs covered during lectures:**

Dermatological

231. Scaling

232. Pustules and papules

233. Nodules

234. Pigmentation disorders (coat or skin)

235. Alopecia

236. Erosive/ulcerative skin disease

237. Otitis externa

238. Pododermatitis

239. Disorders of the claws

240. Anal sac/perianal disease



	<p>Ocular</p> <p>241. Red eye 242. Corneal opacification 243. Corneal ulceration/erosion 244. Lens lesions 245. Retinal lesions 246. Intraocular hemorrhage/hyphaema 247. Abnormal appearance of anterior chamber</p> <p>Muscular</p> <p>248. Muscular atrophy or hypertrophy 249. Trismus ('lockjaw') 250. Weakness</p> <p>Urogenital</p> <p>251. Kidneys abnormal on palpation 252. Bladder abnormalities 253. Prostate abnormal on palpation 254. Uterus abnormal on palpation 255. Testicular abnormalities 256. Penis abnormalities</p>		
Prerequisites		Required	
Course Content	<p><b>Orthopedics</b></p> <ul style="list-style-type: none"> <li>• Orthopedic examination and diagnostic tools</li> <li>• Fractures: classification, diagnosis and treatment</li> <li>• Delayed union and nonunion</li> <li>• Treatment of acute and chronic bone infections</li> <li>• Arthrology</li> <li>• Principles of joint surgery</li> <li>• Fractures and orthopedic conditions of the fore limb</li> <li>• Fractures and orthopedic conditions of the hind limb</li> <li>• Fractures of the mandible and maxilla</li> <li>• Miscellaneous conditions of the musculoskeletal system</li> </ul> <p><b>Soft tissue surgery</b></p> <ul style="list-style-type: none"> <li>• Surgery of the skin</li> <li>• Abdominal procedures</li> <li>• Surgery of the digestive system</li> <li>• Surgery of the reproductive tract</li> <li>• Surgery of the urinary tract</li> <li>• Perineal procedures</li> <li>• Surgery of the head and neck</li> </ul> <p><b>Infectious diseases</b></p> <ul style="list-style-type: none"> <li>• laboratory diagnosis</li> <li>• Therapy</li> <li>• Vaccinations</li> </ul>		

	<ul style="list-style-type: none"> <li>• Poly systemic bacterial, rickettsial, viral, mycotic and protozoal diseases</li> </ul> <p><b>Differential diagnosis</b></p> <ul style="list-style-type: none"> <li>• Historical signs</li> <li>• General</li> <li>• Gastrointestinal</li> <li>• Cardiorespiratory</li> <li>• Dermatological</li> <li>• Neurological</li> <li>• Ocular</li> <li>• Musculoskeletal</li> <li>• Reproductive</li> <li>• Urological</li> </ul> <p>Physical signs</p> <ul style="list-style-type: none"> <li>• General</li> <li>• Gastrointestinal</li> <li>• Cardiorespiratory</li> <li>• Dermatological</li> <li>• Neurological</li> <li>• Ocular</li> <li>• Musculoskeletal</li> <li>• Urogenital</li> </ul>
Teaching Methodology	Lecture-based learning, practical sessions for each thematic area of the course and self-directed learning.
Bibliography	<ol style="list-style-type: none"> <li>1. <u>Small Animal Orthopedics and Fracture repair,4th, Piermattei</u></li> <li>2. <u>Atlas of Orthopedic surgical procedures of the dog and cat, Johnson</u></li> <li>3. <u>Small animal soft tissue surgery, Monnet</u></li> <li>4. <u>Manual of Small Animal soft tissue Surgery, Tobias</u></li> <li>5. <u>Differential Diagnosis in Small Animal Medicine, 2nd, Gough</u></li> <li>6. <u>Small animal differential diagnosis, 2nd, Thompson</u></li> </ol>
Assessment	Final exam
Language	English