

Jordan University of Science and Technology
Faculty of Veterinary Medicine
Department of Pathology and Animal Health
First Semester 2006/2007
Course Syllabus

Course Information	
Course Title	Veterinary Pathology
Course Code	VM 451
Prerequisites	VM 352
Course Website	
Instructor	Prof. Nabil Hailat
Office Location	G1L2
Office Phone #	22026
Office Hours	10-11,(S,T,TH)
E-mail	hailatn@just.edu.jo
Teaching Assistant(s)	Graduate students
Course Description	
<p>This course is a continuation of the Vet. Pathology which was taught in the winter semester of the previous academic year and is designed so that as a veterinary student you will capture and understand the mechanisms of pathological alterations that occur in an organ / system. The course will address the different diseases of the different systems.</p>	

Textbook	
Title	Veterinary Pathology by Jones and Hunt
Author(s)	Thomas C. Jones , Ronald D. Hunt , Norval W. King
Publisher	Blackwell Publishing
Year	1997
Edition	Sixth
Book Website	
Other references	Mechanism of Disease/ A textbook of comparative General Pathology

Assessment		
Assessment	Expected Due Date	Percentage
First Exam	First sixth week	15
Second Exam	First 12 th week	15
Final Exam	After 15-16 weeks	30
Assignments	Laboratory	30
Participation		10
Attendance		

Course Objectives	Percentage
1. Train the students to recognize changes of tissues as the results of an injury at the system level	20%

2. to relate lesions to the mechanism of diseases	20%
3. to learn how to reach morphological diagnosis of different systems of several animal species.	20%
4. to learn how to study glass slides to reach a diagnosis.	30%
5. to learn how to collect information and relate that to disease diagnosis	10%
6.	

Teaching & Learning Methods
Lectures, seminars, videos, glass slides

Learning Outcomes: Upon successful completion of this course, students will be able to	
Related Objective(s)	Reference(s)
1. the student will be able to recognize lesions and diseases and reach diagnosis of the GIT system	Chapter 23
2 the student will be able to recognize lesions and diseases and reach diagnosis of the Respiratory system	Chapter 20
3 the student will be able to recognize lesions and diseases and reach diagnosis of the Cardiovascular system	Chapter 21
4 the student will be able to recognize lesions and diseases and reach diagnosis of the Renal system	Chapter 24
5 the student will be able to recognize lesions and diseases and reach diagnosis of the Reproductive system	Chapter 25
6 the student will be able to recognize lesions and diseases and reach diagnosis of the Hematopiotic and Lymphatic systems	Chapter 22

Useful Resources

Course Content		
Week	Topics	Chapter in Textbook (handouts)
1	Digestive System Pathology of the upper digestive tract. (2-3h) a- congenital anomalies. b- Cheilitis, stomatitis. c- Pharynx & ocsophagus. d- Forestomachs: - Ruminal tympany - foreign body	Chapter 23

	<ul style="list-style-type: none"> - rumintis. - LSDA - abomasal dilation, displacement and volvulus. - Gastritis. - Gastriculceration - Gastrinneoplasms 	
2	<p>Pathology of the lower digestive tract. (2-3h)</p> <ul style="list-style-type: none"> a- neonatal diarrhea (mechanisms) : <ul style="list-style-type: none"> - E.coli. - Transmissible gastroenteritis. - Calf corona verus. - Rota virus - Cryptosporidiosis. - Coccidiosis - Clostridial diarrhea b- Diseases of animal beyond the neonatal period ; <ul style="list-style-type: none"> - Edema disease - Salmonellosis. - Swine dysentery. - Compylobacter enterocolitis - enterotoxaemia - paratuberculosis - Equine granulomatous enteritis - Colitis X - Coccidiosis - Toxins - Parasities c- Intestinal obstruction <ul style="list-style-type: none"> - Mechanical -Intestinal displacement 	Chapter 23
3	<p>Liver (2h)</p> <ul style="list-style-type: none"> a. Structure and function b. Reaction to injury c. Fatty degeneration d. Hepatocellular necrosis e. Circulatory disturbances f. Hepatitis g. Metabolic liver disease h. Toxic liver disease I. Parasitic disease j. Cirrhosis 	Chapter 23
3	<p>Gastritis and enteritis in dog and cat (1h)</p> <ul style="list-style-type: none"> a. Feline panleukopenia b. Canine parvovirus enteritis c. Canine coronavirus enteritis d. Canine distemper e. Canine hepatitis f. Colibacillosis g. Toxoplasmosis h. Histoplasmosis & histiocytic colitis I. Ulcerative colitis j. G.. Neoplasms <p>5. Pancreatitides (1-2)</p> <ul style="list-style-type: none"> a. CUTE b. Chronic c. Atrophic d. Neoplasms 	Chapter 23
	<p>Respiratory system</p> <ul style="list-style-type: none"> 1. Normal structure 2. Nasal cavity and sinuses 	Chapter 20

	<ul style="list-style-type: none"> a. Developmental anomalies b. haemorrhages c. Inflammation d. Neoplasms <p>3. Guttural pouches</p> <ul style="list-style-type: none"> a. haemorrhages b. Inflammation <p>4. Larynx and Trachea</p> <ul style="list-style-type: none"> a. Developmental anomalies b. Inflammation <p>5. Bronchi and Bronchioles</p> <ul style="list-style-type: none"> a. Inflammation b. Bronchiectasis <p>6. Lungs</p> <ul style="list-style-type: none"> a. Developmental anomalies b. Basic lung reactions c. Pneumoconiosis d. Pneumonia <ul style="list-style-type: none"> 1. stages 2. types e. Neoplasms of the lung <p>7. Pleura and ; leural cavity</p> <ul style="list-style-type: none"> a. Abnormal content b. Pleuritis c. Mesothelioma 	
	<p>Cardiovascular system</p> <p>I Structure & function of CVS</p> <p>II Cardiac Failure (1h)</p> <p>III Myocardium (2h)</p> <p>A. Noninflammatory conditions</p> <ul style="list-style-type: none"> 1. Degeneration & necrosis <ul style="list-style-type: none"> Fatty chnge, calcification, hyaline degeneration, hydropic Degeneration, atrophy, infarction 2. Hypertrophy & dilation. <p>B. Inflammation of the myocardium</p> <ul style="list-style-type: none"> 1. Suppurative myocarditis 2. Nonsuppurative 3. Neoplasms of the heart. <p>Pericardium</p> <p>A. Pericarditis</p> <p>C. Pericardial sac fluid (non-inflammatory) hydro, hemo, pyo.</p> <p>Endocardium</p> <p>A. Noninflammatory conditions</p> <ul style="list-style-type: none"> 1. endocardiosis (valiant fibrosis) 2. Calcification of the endocardium <p>B. Inflammatory conditions</p> <ul style="list-style-type: none"> 1. hemorrhages 2. endocarditis 3. miscellaneous lesions of the endocardium <p>IV Arteries</p> <p>A. Physical (1h) INJURIES –</p>	<p>Chapter 21</p>

	<p>RUPTURE.</p> <p>b. Disturbances of circulation (thrombosis, embolism, aneurysm, arteriosclerosis)</p> <p>c. Arteritis</p> <p>V. Veins</p> <p>A. Physical injuries</p> <p>b. phlebitis</p> <p>c. Thrombosis</p> <p>d. Dilation of veins (varicose veins)</p> <p>e. Telangiectasis</p> <p>Lymphatics</p> <p>a. Inflammation</p> <p>b. Dilation and rupture of lymphatics</p> <p>VI. Neoplasms of blood vessels</p> <p>a. Hamangioma</p> <p>b. Hemangiosarcoma</p> <p>c. Hemangiopericytoma</p>	
	<p>Reproductive system</p> <p>Male Genital system</p> <p>1. Testis and epididymis</p> <p>a. Developmental anomalies</p> <ul style="list-style-type: none"> - Cryptorchidism - Ectopia testis - Testicular hypoplasia <p>b. Hydrocele</p> <p>c. Testicular degeneration</p> <p>d. Orchitis and epididymitis</p> <p>e. Neoplasma</p> <p>2. Prostate gland</p> <p>a. Hypoplasia</p> <p>b. Atrophy</p> <p>c. Hypertrophy / hyperplasia</p> <p>d. Squamous metaplasia</p> <p>e. Prodisyid</p> <p>f. Neoplasms</p> <p>3. Penis and prepuce</p> <p>a. Developmental anomalies</p> <p>b. Balanitis</p> <p>c. Miscellaneous</p> <p>d. Neoplasms</p> <p>4. Intersex</p> <p>a. Hermaphroditism</p> <p>b. Pseudo-hermaphroditism</p> <p>c. Freemartinism</p> <p>Female Genital system :</p> <p>1. Ovary</p> <p>a. Developmental anomalies</p> <p>b. Oophoritis</p> <p>c. Deranged development of ovarian follicles</p> <p>c. Neoplasms</p> <p>2. Oviduct</p> <p>a. Developmental anomalies</p> <p>b. Salpingitis</p> <p>3. Uterus</p> <p>a. Developmental anomalies</p> <p>b. Malposition</p> <p>c. Endometrial hypoplasia</p> <p>d. Inflammation</p> <p>4. Cervix</p> <p>a. Inflammation</p>	<p>Chapter 25</p>

	<ol style="list-style-type: none"> 5. Vagina and Vulva <ol style="list-style-type: none"> a. Cysts b. Trauma c. Inflammation d. Congestion and edema e. Neoplasms 6. Mammary gland <ol style="list-style-type: none"> a. Developmental anomalies b. Mastitis c. Neoplasms 	
	<p style="text-align: center;">Renal system</p> <ol style="list-style-type: none"> 1. renal structue and function / anatomy (1h) 2. Glomeruloepritis <ol style="list-style-type: none"> a. Acute proliferative b. Membranous c. Memberanoproliferative d. Chronic glomerulonephritis e. Immune complx 3. Intersitial nephrities <ol style="list-style-type: none"> a. Acute interstitial nephiritis <ul style="list-style-type: none"> - Toxic tubular <ul style="list-style-type: none"> - Hypoxic - Immunologic - Infectious intersitial nephritis b. Chronic interstitial nephritis c. Pyelonephritis 4. Urinary obstruction and hydronephrosis (1h) 5. Urinary neoplasms 6. Ureters, urachus, baldder and urcthra (Inflammation) 	Chapter 24
	<p style="text-align: center;">- Pathology of Hematopoietic system</p> <ol style="list-style-type: none"> 1. Structure and funtion 2. Thymus <ol style="list-style-type: none"> a. Developmental changes of the thymus b. Inflammatory disease c. Neoplastic desease 3. Lymph node <ol style="list-style-type: none"> a. General reaction in the lymph nodes b. Developmental changes c. Inflammatory diseases d. Hyperplasa and neoplasia (lymphoma) 4. Spleen <ol style="list-style-type: none"> a. Developmental changes b. Degenerative disease c. Rupture d. Torsion e. Cysts f. Circularory g. Inflammatory condutions h. Hyperplasia 5. Hemostatic funtion <ol style="list-style-type: none"> a. platelet funtion <ul style="list-style-type: none"> - Development - Anatomy - Physiology - Bleeding time 6. Hemostatic Dysfunction 	Chapter 22

	Thrombocytopenia, secretion defects, aggregation defects, adhesion defects.	
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Additional Notes
<p>The course is taught by two instructors, Nabil Hailat, DVM, Ph.D and Dr. Wael Hananeh</p> <p>.We welcome any positive or negative criticism and wish you good luck.</p>

Thomas Carlyle Jones, Ronald Duncan Hunt, Norval W. King. This is the latest edition of the standard in comparative pathology, used by practitioners and students alike as a comprehensive yet understandable resource. Rigorously revised, the sixth edition introduces a wealth of new information on immunopathology and pathogenesis, viral diseases, environmental toxins, parasitic diseases, and nutritional problems in domestic and captive animals. Approximately half of the information presented is new, as are about 200 illustrations. Plus, the text's presentation is improved, with a larger format, and a more reader-friendly design to appeal to student The theory and practice of veterinary pathology, veterinary clinical pathology, veterinary parasitology, veterinary toxicology, and related disciplines provide the basis for accurate diagnosis and a rational approach to the treatment and prevention of animal diseases. Graduate Study. The department offers work for the degree master of science and doctor of philosophy with a major in veterinary pathology. The majority of students choose an area of specialization in veterinary anatomic pathology, veterinary clinical pathology, or veterinary parasitology (<http://vetmed.iastate.edu/vpath/academic> Jones TC, Hunt RD & King NW 1997. Veterinary Pathology. Blackwell Publishing. Advances in Veterinary Sciences American Journal of Veterinary Medical Association Avian Diseases Current Contents Indian Journal of Animal Sciences Indian Journal of Poultry Science Indian Journal of Veterinary Pathology Journal of Immunology and Immunopathology Veterinary Bulletin Veterinary Pathology. e-Resources. www.iavp.org (Indian Journal of Veterinary Pathology) www.vetpathology.org (Veterinary Pathology) www.tandf.co.uk (Avian Pathology) www.avdi.allenpress.com (Avian Diseases) www.elsevier.com/locate/vetimm (Veterinary Immunology and Immuno- pathology).