





University: South Valley

Course Specifications

Programme(s) on which the course is given: Bachelor degree of veterinary science.

Major or minor element of programme	s:
Department offering the programme:	Ar
Department offering the course:	Ar
Academic year / Level:	4th
Date of specification approval:	

Major Animal Medicine department Animal Medicine department th year (second semester) 22-12-2009

A-Basic Information

Title:	Clinical Laboratory Diagnosis
Code:	426
Credit Hours:	
Lecture:	2 hrs / week / Semester
Tutorial:	
Practical:	4 hrs / week/ Semester
Total:	6 hrs / week/ Semester

B- Professional Information

1 – Attributes of the graduates of Veterinary Medicine

The graduate must be able to:

- 1.1. Be committed to continuous enhancement, coping with the most recent effective and efficient performance standards of the veterinary profession, and gaining community confidence.
- 1.2. Apply research concepts and technologies in different fields of veterinary sciences.
- 1.3. Knowledge of establishing a diagnostic laboratory, Quality control assurance system, lab safety, sampling, different diagnostic tools and equipments, spectrophotometry, flamephotometry, etc. different lab diagnostic methods and tests.

Faculty: Veterinary medicine

2 - Intended Learning Outcomes of Course (ILOs):

2. A. Knowledge and Understanding:

Graduates of Veterinary Medical program must acquire the following knowledge and understanding:

- 2. A.1. Quality control assurance in the laboratory work from taking the sample till getting the result of the test or assay.
- 2. A.2. Lab safety and handling the different lab reagents and kits.
- 2. A.3. How to deal with different apparatuses and techniques used for lab diagnosis.
- 2. A.4. Interpretation of different lab findings and result of various diagnostic tests and analysis.

2. B. Intellectual Skills:

2. B.1. Foster critical thinking and scientific curiosity.

2. B.2. Proficiently secure diagnostic reasoning, develop problem lists and differential diagnosis in order to deductively and critically reach the most appropriate solution (s) and management of the addressed clinical problems.

- 2. B.3. Skills in Quality control assurance.
- 2. B.4. Skills in keeping lab safety.
- 2. B.5. Skills in using different lab techniques.
- 2. B.6. Skills in carrying out analysis and assays for various diagnostic purposes.
- 2. B.7. Correct reading, calculation and Interpretation as well as registration of the data.

2. C. Professional and Practical Skills:

Graduates must attain the capacity to:

- 2. C.1. Employ all the gained knowledge and understanding in clinical practice in a skillful pattern.
- 2. C.1. How to establish a diagnostic lab.
- 2. C.2. How to perform and maintain the Quality control assurance system in the laboratory.
- 2. C.3. How to use different apparatuses and techniques.
- 2. C.4. Correct sampling and preservation of samples to be tested.
- 2. C.5. Interpretation of the results.

2. D. General and Transferable Skills:

Graduates must have the ability to:

- 2. D.1. Work under pressure and / or contradictory conditions.
- 2. D.2. Establishing a diagnostic lab with high Quality control management.
- 2. D.3. Dealing with various Instruments and Techniques.
- 2. D.4. How to interpret results and keeping data.

3- Contents:

Theoretical (Lectures)

Topics	No. of hours	Lectures
Establishing a lab, sampling and lab safety.	2	1
Quality control assurance in the laboratory.	4	2
Hematology.	4	2
Blood Chemistry.	4	2
Liver function tests.	2	1
Urine analysis and renal function tests.	2	1
Fecal analysis and rumenal fluid and pancreatic function tests.	2	1
Acid base balance, water electrolyte & Cereprospinal fluid	2	1
Clinical microbiology and transudate and exudates examination	2	1
Total	24	12

Practical (Lessons):

Topics	No. of hours	Practical s
Equipments, Instruments, chemicals glass wars and tools in the lab.	4	1

Pool and Quality control chart.	4	1
Hematology.	12	3
Blood Chemistry.	4	1
Liver function tests.	4	1
Urine analysis and renal function tests.	8	2
Fecal analysis and rumenal fluid and pancreatic function tests.	4	1
Acid base balance, water electrolyte & Cereprospinal fluid	4	1
Clinical microbiology and transudate and exudates examination	4	1
Total	48	12

4. Teaching and Learning Methods:

- 4.1. Data show and slide show.
- 4.2. Blck board and choke.
- 4.3. Self performing of lab tests.
- 4.4. Microscopes, hematology apparatuses and equipments
- 4.5. Spectrophotometer, Flame photometer and Plasmaimmission.

5- Student Assessment Methods:

5.1. Mid-Term examination to assess the intended learning outcomes in half of the semester

5.2. Practical examination to assess intended learning and practical skills outcomes

5.3. Final-term Examination to assess the intended learning outcomes in whole semester

5.4. Oral examination to assess the intended learning and skills outcomes in whole subject and related veterinary science.

Assessment Schedule :

Assessment 4: Oral

Assessment 1: Mid-Term examination. Week (8th week of the semester)

Assessment 2: Practical examination. Week (13th week of the semester)

Assessment 3: Final-term examination. Week (14th week of the semester)

examination. Week (15th week of the semester)

Weighting of Assessments:

Mid-Term Examination	10%
Final-term Examination	50 %
Oral Examination.	10 %
Practical Examination	20 %
Other	10%
Total	100%

Any formative only assessments

Other types of assessment (Case report, essays, and making posters)

6- List of References:

6.1. Course Notes

Hand out of the lectures and ppt and CDs direct to the students

And Internal Diseases with from Faculty of veterinary medicine, Assiut

University

6.2. Essential Books (Text Books)

- Veterinary laboratory medicine(Interpretation and Diagnosis), Meyer, Coles and Rich. Saunders Company 1992.
- Essentials of Veterinary Hematology, Jain, William J. in our Faculty • Library.
- 6.3. Recommended Books

In our Faculty Library:

- 6.3.1. Animal Parasitology, J.D. Smyth.
- 6.3.2. Wintrobes clinical hematology.
- 6.3.3. Clinical chemistry.
- 6.3.4. Pathology of Domestic animals.
- 6.3.5. Microbiology, Prescott, Lansing M.
- 6.3.6. Color atlas and text book of diagnostic microbiology, Koneman, Elmer W.
- 6.3.7. Clinical Virology, Leland, Diane Schultze.
- 6.3.8. A laboratory for general, organic and Biochemistry, Henrickson, Charles H.
- 6.3.9 Medical and Veterinary Entmology, D.S.Kettle.
- 6.3.10. Veterinary Laboratory medicine, Meyer, Dennis, J.
- 6.3.11. Laboratory procedures for veterinary technicians,
- 6.4. Periodicals, Web Sites, etc

Journal of Veterinary Internal Medicine

(http://www.wiley.com/bw/journal.asp)

- <u>American College of Veterinary Internal Medicine</u>
- Internal Medicine www.criticalcarevets.com
- Internal Medicine www.animal-emergency.com
- <u>Central Texas Veterinary Specialty Hospital Internal Medicine</u>
- IVIS Bookstore: Ruminant Medicine International Veterinary ...
- <u>Alberta Agriculture, Food and Rural Development</u> Livestock diseases and parasites.
- <u>American Association of Bovine Practitioners</u>

The American Association of Bovine Practitioners is an international association of veterinarians organized to enhance the professional lives of its members through relevant continuing education that will improve the well-being of cattle and the economic success of their owners, increase awareness and promote leadership for issues critical to cattle industries, and improve opportunities for careers in bovine medicine.

- <u>American Association of Small Ruminant Practitioners</u>
- <u>Animal Disease Information</u>

Animal disease factsheets, image database, power points, zoonotic fast facts, disease wall charts, etc.

Bovine Tuberculosis Eradication: Uniform Methods and Rules

(PDF) These Uniform Methods and Rules (UM&R) are the minimum standards adopted and approved by the Animal and Plant Health Inspection Service (APHIS). They were established for the maintenance of tuberculosis-free accredited herds of cattle and bison and the maintenance of State or zone status in the U.S. Department of Agriculture's (USDA) tuberculosis eradication program. These minimum standards do not preclude the adoption of more stringent standards by any State or zone.

• <u>Cattle Diseases</u>

University of Nebraska - NU Institute of Agriculture and Natural Resources

Food Animal Production Medicine

This helpful website contains a wide variety of resources for food animal veterinarians. Click on the forms and info link to be

connected to PDF files, photos, and videos covering nutrition, milk quality, husbandry (stalls, ventilation, hygiene), software, and lameness. Click on goal form for a detailed plan to improve dairy production medicine goals. The publication link includes refereed journals, proceedings, abstracts, book chapters, links to popular press, and posters.

- <u>Goat Veterinary Society</u>
- Infectious Disease In Food Animals

Proceedings of the USDA's National Animal Disease Center virtual conference on infectious diseases of food animals. Topics include respiratory disease, TSE, mycobacterium, salmonella, e. coli Infections, and spirochete diseases.

Large Animal Cardiology

Tutorial sessions presented by the University of Pennsylvania School of Veterinary Medicine.

Large Animal Veterinary Rounds

Rounds transcripts presented at the Western College of Veterinary Medicine (University of Saskatchewan) Department of Large Animal Clinical Sciences. The transcripts are available in .pdf format and are searchable by year.

• National Mastitis Council

The NMC is a not-for-profit professional organization devoted to reducing mastitis and enhancing milk quality. The NMC promotes research and provides information to the dairy industry relative to udder health, milking management, and milk quality. Some proceedings are for members only, but clicking on information and resources opens a large variety of links for dairy practitioners and producers.

<u>A Guide For Livestock Exporters</u>

From The U.S. Department of Agriculture (USDA). Though this is a guide for livestock exporters, it contains a lot of information on general transport guidelines.

- <u>American Sheep Industry Association</u>
- <u>Animal Science Oklahoma State University</u>
- <u>Beef Cattle Resources</u>
- Bovine Theriogenology Images

A variety of images ranging from artificial insemination to postpartum. Gathered from the teaching files of R. G. Elmore, D.V.M., M.S.

Diplomate American College of Theriogenology.

- Breeds Buffalo, Camel, Donkeys, etc
- Camelids, Bison, Buffalo, Deer & Elk, Donkeys, etc
- <u>Cattle</u>

Select from an alphabetical listing of cattle breeds ranging from Africander through Yanbian.

• <u>Cow-Calf Corner</u>

File of information on cow, bull, and calf management. Covering topics from replacement heifers to general cow herd management. Sponsored by the Oklahoma Cooperative Extension Service and Oklahoma Education Television Authority.

• Dairy Cattle

www virtual library for dairy production.

Dairy Cattle Nutrition Website

Pennsylvania State University, College of Agricultural Sciences maintains the Dairy Cattle Nutrition and Feeding Management program website. There are publications available covering topics from Diet Formulation and Evaluation to Water and Water Quality.

• Emergency Euthanasia Of Sheep And Goats

This guide is designed to help owners, producers, auction market employees, livestock transporters, and law enforcement officers make the appropriate decisions regarding the emergency euthanasia of sheep and goats. Includes methods and positioning.

Food Animal Production Medicine Nutrition Topics

Publications, information, and data collection tools include: Herd Based Tests For Metabolic Disorders, Introduction To Ruminal Acidosis, Herd Based Diagnosis Of Ruminal Acidosis, Nutritional Management Of Ruminal Acidosis, Factors That Contribute To Ruminal Acidosis, Ketosis And Hepatic Lipidosis, Hypokalemia Article, Calcium Chloride Gel Treatment Of Parturient Dairy Cows, and a Herd Nutrition History And Evaluation Form.

• Foot and Mouth Disease

Latest updates from The Ministry of Agriculture, Fisheries and Food in Great Britain.

• <u>History of the 1967 FMD</u>

Outbreak from the BBC

Information on Foot and Mouth Disease

Detail information on the Aetiology, Epidemiology, Diagnosis, and Prevention and Control of the disease from the Office International des Epizooties.

- Institute for Animal Health: Foot-and-Mouth Disease
- Livestock Library
- <u>Llama</u>
- <u>Merino Varieties</u>
- <u>Pasture Management and Grazing</u>

Information on pasture management, animal health, fencing, weed control and more.

• Small Ruminant Information

A variety of extension publications on sheep from the University of Missouri. Covering subjects from Care of Ewes and Lambs at Lambing Time to Mastitis in the Ewe.

- <u>Yak</u> Yak information sites.
- Equine Medicine
- <u>Pet Animals Medicine News Results</u>
- All Pets Animal Hospital Encinitas, CA

7- Facilities Required for Teaching and Learning

- The subject of clinical laboratory diagnosis should be given in 2 semesters (not in one semester) in total Lecture hrs 2 and practical hrs 2 (in each semester) to reach the National Academic reference standard in the other
- Isolated sanitary room
- ➤ Fixed data show system in the Lecture hall and lessons room.
- ➢ Blood gas analyzer,
- > Auto analyzer.
- Automatic blood cell counter
- Spectrometer and electrophoresis apparatus.

Course Coordinator

Prof. / M. Nour El Din Ismail

Ass.prof. /Adel Elsayed Ahmed

Head of the Department

Prof. / M. Nour El Din Ismail

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