

Specification for Clinical Pathology" Hematology" course 2019/2020

A-Affiliation

1.	Relevant program	Bachelor of Veterinary Medical Science (BVMSc)
2.	Department offering the course	Clinical Pathology

Date of specification approval: ministerial decree No. 1727 on 26/4/2017
(Approved in this template by the department council on 1/10/2019)

B-Basic information

1.	Course title	Clinical Pathology "Hematology"
2.	Course code	406 (A) I
3.	Level	4 th year
4.	Semester	First semester
5.	Total hours	4
6.	Lecture hours	2
7.	Practical hours	2

C-Professional Information

1- Course learning objectives

The course provide basic information about the blood constituents including formation of different blood cells, its morphology, and methods of evaluation and laboratory diagnosis of their disorders in addition to understanding the principles of differentiation between different types of hematopoietic neoplasia and hemostatic disorders.

2- Intended learning outcomes of the course (ILOs):

a- Knowledge and understanding

After successful completion of the course the students should be able to:

- a1- Identify the clinical pathological role of blood constituents
- a2- Illustrate principles of blood cells maturation and release to circulation
- a3- Describe the laboratory method of the blood film spreading and evaluation
- a4- Identify the normal morphology of blood cells and differential diagnosis of its abnormalities
- a5- List the laboratory method of bone marrow examination and interpret the result
- a6- Mention the practice of evaluation of complete blood picture (CBC)
- a7- Identify the fundamental aspect and diagnosis of anemia, polycythemia, leukogram disorders
- a8- List the hematopoietic neoplasia and their differential diagnosis
- a9- Mention the laboratory methods of counting of reticulocytes and platelets
- a10- Describe hemostasis and its disorders

b- Intellectual skills

After successful completion of the course the students should be able to:

- b1- Analyze blood cells disorders.
- b2- Conclude of the type of anemia and polycythemia.
- b3- Judge completes blood picture (CBC) report.
- b4 - Determine the normal and abnormal shapes of erythrocytes in different animal species
- b5 - Assess the function and morphology of leukocytes
- b6 - Judge the results of leukogram
- b7- determine hemopoetic neoplasia
- b8-Assess differential diagnosis of leukemia
- b9 - Estimate hemostatic disorders

c- Professional and practical skills

After successful completion of the course the students should be able to:

- c1- Identify the blood cells of the different species of animals.
- c2- Collect and analyze of the blood samples
- c3- Prepare of diluting fluids stains and blood films.
- c4- Manipulate clinical data to help in diagnosis of blood diseases

d- General and transferable skills

After successful completion of the course the students should have the following skills

- d1- use computer and enhance the presentation skills
- d2- Consult with veterinarian to advise the treatment
- d3- Solve diagnostic problems
- d4- Schedule tasks to save time
- d5-work in team skill

3- Course contribution in the program ILOs:

Course ILOS	Program ILOS
A Knowledge and understanding	a ⁷
B Intellectual skills	b ⁶
C Professional and practical skills	c ⁴
D General and transferable skills	d ^{1,2,3,5,6}

3.1- Course contents:

Topic	Lecture hours	Practical hours
1- General principles of hematology	2	2
2- Hematopoiesis	2	-
3- Erythrocyte morphology and disorders	2	4
4- Evaluation of erythrocytes	2	10
5- Anemia	4	2

6- Polycythemia	2	-
7- Leukocyte morphology, function and kinetic	2	2
8- Evaluation of leukocytes	-	2
9- Interpretation of leukogram	4	2
10- Hematopoietic neoplasia	4	4
11- Hemostatic disorders	6	2
total	30	30

The midterm and practical exams are included during the semester

3.2- ILOs matrix:

Topic	A) Knowledge and understanding	B) Intellectual skills	C) Professional and practical skills	D) General and transferable skills
1- General principles of hematology	a1	b1		
2- Hematopoiesis	a2	b3, b7	c3	d2
3- Erythrocyte morphology and disorders	a4	b4	c1, c2, c3	d2
4- Evaluation of erythrocytes	a3,a4, a5	b3	c1, c3, c4	d1, d4,d5
5- Anemia	a6, a7	b2, b3	c2, c4	d3
6- Polycythemia	a6,A7	b2, b3	c2, c4	d3
7- Leukocyte morphology, function and kinetic	a6,A7	b6	c1, c2 c3	d1, d4,d5
8- Evaluation of leukocytes	a6, a7	b3, b6	c1, c2, c3	d1, d4,d5
9- Interpretation of leukogram	a3,a4, a5	b3, b6	c1, c4	d1, d2, d3,d5
10- Hematopoietic neoplasia	a8	b7, b8	c1, c2	d3
11- Hemostatic disorders	a9, a10	b9	c1, c2	d3

4- Teaching, learning and assessment methods:

ILOs	Teaching and Learning methods							assessment method				
	L	P&M	D	P	Ps	Bs	semester	midterm	oral	practical	written	
a1	x	x	x	0	0	x	x	x	x	0	x	

	a2	x	x	x	0	0	x	x	x	x	0	x
	a3	x	x	x	0	0	x	x	x	x	0	x
	a4	x	x	x	0	0	x	x	x	x	0	x
	a5	x	x	x	0	0	x	x	x	x	0	x
	a6	x	x	x	0	0	x	x	0	x	0	x
	a7	x	x	x	0	0	x	x	0	x	0	x
	a8	x	x	x	0	0	x	x	0	x	0	x
	a9	x	x	x	0	0	x	x	0	x	0	x
	a10	x	x	x	0	0	x	x	0	x	0	x
	Intellectual skills	b1	x	x	x	0	x	x	x	x	x	0
b2		x	x	x	0	x	x	x	x	x	0	x
b3		x	x	x	0	x	x	x	0	x	0	x
b4		x	x	x	0	x	x	x	0	x	0	x
b5		x	x	x	0	x	x	x	0	x	0	x
b6		x	x	x	0	x	x	x	0	x	0	x
b7		x	x	x	0	x	x	x	0	x	0	x
b8		x	x	x	0	x	x	x	0	x	0	x
b9		x	x	x	0	x	x	x	0	x	0	x
al and practical	c1	0	x	x	x	x	0	x	0	x	x	0
	c2	0	x	x	x	x	0	x	0	x	x	0
	c3	0	x	x	x	x	0	x	0	x	x	0
	c4	0	x	x	x	x	0	x	0	x	x	0
General skills	d1	0	x	x	0	0	0	x	0	x		0
	d2	0	0	x	0	x	x	x	0	x	x	0
	d3	0	0	x	0	x	0	x	0	x	0	x
	d4	x	0	0	0	0	0	x	0	x	0	x
	d5	0	0	x	x	0	x	x	0	x	0	0

L :Lecture, P&M: Presentations & Movies, D&S: Discussions & Seminars PT: Practical, Ps: Problem solving, Bs: Brain storming

5- Assessment timing and grading:

Assessment method	timing	grade
Mid-term exam and semester work	6 th week	15
Practical exam	14 th week	20
oral exam	End of semester	15
Written exam	End of semester	50
total		100

6- List of references

6.1- Course notes:

Clinical pathology part 1 (hematology), Practical part 1 and laboratory notes, color atlas (edited by staff members)

6.2- Essential books (text books)

- Duncan, Prasse and Mahaffey (2003) Veterinary laboratory medicine.

6.3- Recommended books

- Course note.
- Kathleen P. Freeman (2015) Veterinary clinical pathology.
- Michael Iapostola, (2014) Laboratory medicine
- Barbara J. Bain (2012) practical hematology.
- Mary Anna Thrall, (2012) Veterinary Hematology and clinical chemistry

6.4- Periodicals, Web sites, . . . etc

- Journal of American Veterinary Medical Association.
- American journal of veterinary clinical pathology.
- <http://www.ivis.org/home.asp>
- www.ekb.eg

7- Facilities required for teaching and learning

- Teaching hall (data show, white board).
- Clinical pathology Laboratory.
- Faculty education farm
- Central laboratory

Course coordinator: Dr. Ayman Samir Farid.

Head of department Prof Dr. Khalid Mohamed Mustafa Fararh

Signature

Date 1/10/2019