

Specification for Clinical Pathology "blood Chemistry and physiology" 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 "blood Chemistry and physiology"
2.	Course code	414 (B) II
3.	Level	4 th year
4.	Semester	Second semester
5.	Total hours	4
6.	Lecture hours	2
7.	Practical hours	2

C-Professional Information

1- Course learning objectives

The course provide the basic information about the chemical analysis of the body fluids and excretions, for the purposes of diagnosis of a disease condition in addition to understanding the principles of liver, muscle, kidney and pancreas functions and methods used for evaluations.

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 basic knowledge about body fluids
- a2- List the Principles of electrolytes homeostasis
- a3- Identify the parameter of liver, kidney and pancreas functions
- a4- Approach the evaluation of organ function tests
- a5- Describe the fundamental aspect and diagnosis of jaundice, renal failure, and diabetes mellitus
- a6- Identify the metabolic disorders of lipid, carbohydrates and proteins
- a7- Distinguish the cytology of effusions
- a8- Mention the different samples used for different biochemical assays
- a9- Identify the aims of using molecular biology as a clinical pathology tool
- a10- List the different techniques of molecular biology used for diagnostic purposes.

- a11- Familiarize with different apparatuses used in clinical biochemical assays
a12- Interpret the results obtained by different techniques used in clinical biochemistry

b- Intellectual skills

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

- b1- Comment the serum chemistry profile
b2- Judge the type of jaundice and renal failure
b3- Analyze the organ functions tests reports
b4- Solve the unexpected problems happened during assay.
b5- Assess alternative approaches which can be used for diagnosis of different diseases
b6- Judge the suitability of the samples for different assay.
b7- Criticize the common artifacts and problems render the samples unsuitable for assay.
b8- determine the ideal antibiotic suitable for treatment of different bacterial diseases

c- Professional and practical skills

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

- c1- practice the adjusting and operating spectrophotometer
c2- Collection and analysis of the serum and plasma samples
c3- Prepare solutions for chemical tests
c4- Use clinical data to help in diagnosis of metabolic diseases
c5- Conduct different techniques of molecular biology
c6- Implement and establish the best laboratory conditions for different techniques
c7- Write a decision from clinical biochemical data

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 clinical chemistry	2	2
2- Water and electrolytes balance	4	2
3- Acid base balance	4	-
4- Lipid, carbohydrates and proteins evaluation	2	2
5- Cytology	2	2
6- Liver and muscle function	6	2
7- Renal function and urinalysis	4	8
8- Gastrointestinal and pancreas functions	4	4
9- Antibiotic sensitivity test	-	4
10- Basics of molecular biology		4
11- Acute phase proteins	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 clinical chemistry	a1, a8, a11	b4	c1, c3	d1,d3,d4, d5
2- Water and electrolytes balance	a1	b1	c2, c3	d2
3- Acid base balance	a2	b1	c2, c3, c6	d2
4- Lipid, carbohydrates and proteins evaluation	a5,a6	b1	c2, c3, c4, c7	d2
5- Cytology	a7	b5, b6, b7	c2, c3	d2
6- Liver and muscle function	a3, a4,a5	b1, b2, b3	c2, c3, c7	d2
7- Renal function and urinalysis	a3, a4, a5	b1, b2, b3	c2, c3, c7	d2
8- Gastrointestinal and pancreas functions	a3, a4	b1, b3	c2, c3, c7	d2
9- Antibiotic sensitivity test	a12	b6, b7, b8	c3, c6	d2
10- Basics of molecular	a9,a10	b5,	c3, c5, c6	d2

biology				
11- acute phase proteins	a6	b1	c2, c3, c7	d2

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	
Knowledge and understanding	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
	a11	x	x	x	0	0	x	x	0	x	0	x
	a12	x	x	x	0	0	x	x	0	x	0	x
Intellectual skills	b1	x	x	x	0	x	x	x	x	x	0	x
	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
Professional and practical skills	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
	c5	0	x	x	x	x	0	x	0	x	x	0
	c6	0	x	x	x	x	0	x	0	x	x	0
	c7	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
- Kits

Course coordinator: Dr. Ayman Samir Farid.

Head of department Prof Dr. Khalid Mohamed Mustafa Fararh

Signature

Date 1/10/2019