



## Course specification

### 1-Basic information

<b>Course Code:</b>	S2- BIOC
<b>Course title :</b>	General Biochemistry
<b>Academic year:</b>	2 <sup>nd</sup> academic Year
<b>Program title:</b>	B. Sc. Veterinary Medical sciences
<b>Contact hours/ week</b>	7 hours/week, (4 Lect./week, 3 Practical/week)
<b>Approval Date</b>	

### 2-Professional information

**Overall aims of course:**

**This course aims to:**

- 1-Identifying, acquire and distinguish the chemical composition of the body.
- 2- Recognizing the mechanisms of biochemical reactions inside the animal cell and the diseases which may develop due to disturbance in these biochemical reactions.

### 3- Intended learning outcomes of course (ILOs)

**a-Knowledge and understanding:**

**By the end of this course the student should be able to:**

- a1- Recognize the structure of biological macromolecules inter in structures of the body.
- a2-Outline the function and biochemical use of each substance inter in the structure of animal body.
- a3- Describe the different mechanisms of maintain the biochemical hemostasis and balance.
- a4- describe the biochemical alterations which may lead to development of certain diseases and disorders.
- a5- Illustrate the positive and negative feedback mechanisms to achieve the body balance.
- a6- Describe the functional organization and composition of various body fluids.

**b-Intellectual skills**

**By the end of this course the student should be able to:**

- b1- Analyze the biochemical composition of different body organ and tissue which contributes its normal function.
- b2- Interpret the biochemical data and use it for useful evaluation of functions of different body tissues.
- b3- Discriminate the general biochemical mechanisms that culminate the functional disturbances of animal body.

**c-Professional and practical skills**

**By the end of this course the student should be able to:**

- c1- assess normal body functions.



## Course specification

C2- Identify the differences in structure and function of each chemical substance of the living cell.

C3- perform different biochemical laboratory experiments.

C4- Perform various biochemical tests for identifying unknown biochemical substances.

C5- Collect urine, blood of different animal species.

C6- Perform blood and urine biochemical analysis.

### **d-General and transferable skills**

**By the end of studying the course, the student should be able to:**

d1- Work in a group and manage time.

d2- Exhibits the sense of beauty and neatness.

d3- Utilize new technological tools.

d4- Utilize efficiently library facilities and IT tools.

### 4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
2 <sup>nd</sup> year – First term – General Biochemistry – (Lec. 4h/ week, Pract. 3h/ week)	Structure of the cell and cell biology	8	8	-----
	Chemistry of Carbohydrates	40	10	30
	Chemistry of proteins	15	12	3
	Chemistry of lipids	11	8	3
	Vitamins	11	8	-----
	Enzymes	9	6	3
	Hormones	13	10	3
	Total	104	62	42
2 <sup>nd</sup> year – Second term – Biochemistry Metabolism and Body fluids. (Lec. 2h./week, Pract. 3h/week 3h/week3h./week)	Biological oxidation	10	4	6
	Metabolism of carbohydrates	12	6	6
	Metabolism of protein	14	14	9
	Metabolism of lipid	17	8	9
	Buffers and acid base balance	19	10	-----
	Chemistry of Blood and pigments	19	16	-----
	Chemistry of Urine	13	4	9
	Chemistry of milk	4	4	3
	Total	106	64	42



## Course specification

### 5-Teaching and learning methods

- 5.1- Lectures (brain storm, discussion) using board, data shows and -----  
 5.2- Self learning by preparing essays and presentations (computer researches and faculty library)  
 5.3- Practical (models, samples of ----).

### 6-Teaching and learning methods for the students with disabilities

Office hours and special meeting.

### 7-Student assessment

#### 7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Final Exam	a1, a2,a3,a4,a5,a6	B1, b3		
Practical Exam		B2,b3	c1,c2,c3,c4,c5,c6	d1, d2,d3
Oral Exam	a1, a2,a3,a4,a5,a6	b1,b2,b3,b4,b5		d2

#### 7.2. Assessment schedules/semester:

Method	Week(s)
Practical exams	14 <sup>th</sup> weak
Final exams	managed by administrations
Oral Exam	The same day of the final exam.

#### 7.3. Weight of assessments:

Assessment	Weight of assessment
Practical exams	30%
Final exams	50%
Oral exams	20%
	100%

### 8- List of references

#### 8.1. Notes and books

**Departmental notes:** none

#### 8.2. Essential books:

- Hand Book of Biochemistry
- Practical Clinical chemistry



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## Course specification

### **8.3. Recommended texts**

- Haper's of Biochemistry.
- Biochemistry and clinical correlation.

### **8.4. Journals, Websites .....etc**

**Journals:** Biomedicine and pharmacotherapy, clinical chemistry and molecular biology

**Websites:** www.pubmed.com.

**Course Coordinators**

**Head of Department**



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Topic	Week	Intended learning outcomes of course (ILOs)			
		K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Structure of the cell and cell biology	1,2,3,4	1,3,4	3	2	1,2,3,4
Chemistry of Carbohydrates	1,2,3,4,5,6,7,8,9,10	3,4	1,2,3	1,3,6	1,2,3,4
Chemistry of proteins	5,6,7,8, 9,10,11	1,2,3	1,2,3	31	1,2
Chemistry of lipids	7,8,9,10,12	1,2,3,4	1,2,3	1	1,2,3
Vitamins	11,12,13	1,2,3,4,5	1,2,3	1	1,2,3,4
Enzymes	11,12,13	1,2,3,4,5	1,2,3	1	1,2,3
Hormones	13	1,2,3,4,5,6	1,2,3	1	1,2
Biological oxidation	1,2	1,2,3,4,5,6	1,2,3	1,3,4	1,2
Metabolism of carbohydrates	1,2,3,4	1,2,3,4,5,6	1,2,3	1,3,4	1,2,3,4
Metabolism of protein	3,4,5,6	1,2,3,4,5	1,2,3	1	1,2,3,4
Metabolism of lipid	5,6,7,8	1,2,3,4,5	1,2,3	1,5	1,2,3
Buffers and acid base balance	8,9,10,11	1,2,3,4,5	1,2,3	1,5	1,2,3
Chemistry of Blood and pigments	11,12,13	1,2,3,4,5	1,2,3	1,3	
Chemistry of Urine	10	1,2,3,4,5	1,2,3	1,3	1,2,3,4
Chemistry of milk	10,11,12,13	1,2,3,4,5,6,7	1,2,3	1	

