

Specification for Biochemistry and molecular biology course 2019/2020

A-Affiliation

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

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	Biochemistry and molecular biology
2.	Course code	211 (B) IV
3.	Level	2 nd 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 provides the students with the basic education about the Metabolism of Proteins , Protein biosynthesis, Biological fluids and Hormones and their molecular basics

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 the nitrogen balance
- a2- Explain the role of protein in growth
- a3- Illustrate the Anabolism and catabolism of proteins
- a4- Mention the role of biological fluids in persistence of life
- a5- Summarize hormones chemistry and biological functions

b- Intellectual skills

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

- b1- Determine the nitrogen balance and growth
- b2- Analyze and tracing the relations between the metabolism and diseases.
- b3- Judge the changes between the microbial and metabolic diseases

c- Professional and practical skills

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

- c1- Practice the accurate chemical reactions concerning with the cell growth.
c2- Demonstrate differentiations between the normal and abnormal metabolic pathways
c.3- Read knowledge about the normal homeostasis of the cellular functions for protein and hormones
c.4- Investigate disturbances in protein metabolism and hormones.

d- General and transferable skills

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

- d1- Communication skill (be a successful member chemists).
d2- Research skills (illustrate a scientific study in the biochemistry laboratories)
d3- Solve scientific problems

3- Course contribution in the program ILOs:

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

3.1- Course contents:

Topic	Lecture hours	Practical hours
Blood nitrogen balance	4	-
Essential and nonessential amino acids		4
Catabolism of amino acids	2	2
Urea formation	2	2
Protein metabolism and kidney functions	2	-
Metabolic disturbances of amino acids	2	-
Protein biosynthesis	2	2
Formation and metabolism of Purines	2	4
Formation and metabolism of Pyrimidins		4
Classification of hormones	2	-
Metabolism of steroid hormones	2	-
Metabolism of proteous hormones	2	2
Role of hormones in metabolism	2	-
Chemical compositions of urine	2	2
Abnormal urine		4
Chemistry of milk	2	4
Chemistry of blood, CSF, Lymph, Synovial, Pleural, pericardial and semen	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
Blood nitrogen balance	a1	b1	c1, c2 , c3,c4	d1, d2, d3
Essential and nonessential amino acids	a2, a3	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Catabolism of amino acids	, a3	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Urea formation	a3	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Protein metabolism and kidney functions	a3	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Metabolic disturbances of amino acids	a2, a3	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Protein biosynthesis	a2, a3	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Formation and metabolism of Purines	a2, a3	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Formation and metabolism of Pyrimidins	a2, a3	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Classification of hormones	a5	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Metabolism of steroid hormones	a5	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Metabolism of proteious hormones	a5	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Role of hormones in metabolism	a5	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Chemical compositions of urine	a4,	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Abnormal urine	a4,	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Chemistry of milk	a4,	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3
Chemistry of blood, CSF, Lymph , Synovial, Pleural, pericardial and semen	a4,	b1, b2,b3	c1, c2 , c3,c4	d1, d2, d3

4- Teaching and learning and assessment methods:

ILOs	Teaching and Learning method							assessment method					
	L	P&M	D&S	P	Ps	Bs	PM	semester	midterm	oral	practical	written	
Knowledge and understanding	a1	x	x	x	x	x	x	0	x	x	x	0	x
	a2	x	x	x	x	x	x	0	x	x	x	0	x
	a3	x	x	x	x	x	x	x	x	x	x	0	x
	a4	x	x	x	x	x	x	x	x	0	x	0	x
	a5	x	x	x	x	x	x	x	x	0	x	0	x
ual	b1	x	x	x	x	x	x	0	x	x	x	0	x
	b2	x	x	x	x	x	x	0	x	x	x	0	x
	b3	x	x	x	x	x	x	x	x	0	x	0	x
al and practical	c1	0	x	x	x	x	x	0	x	0	x	x	0
	c2	0	x	x	x	x	x	0	x	0	x	x	0
	c3	0	x	x	x	x	x	0	x	0	x	x	0
	c4	0	x	x	x	x	x	x	x	0	x	x	0
General skills	d1	x	x	0	x	x	0	0	x	0	x	0	0
	d2	0	x	x	0	0	x	0	x	0	x	0	x
	d3	x	x	x	x	x	x	x	x	0	x	x	x

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

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:

A concise Guide of metabolism edited by biochemistry staff members

6.2- Essential books (text books)

- Rc Gupta (2014) Practical biochemistry
- T.H.El.Metwally (2012) Advanced Topics In Medical & Clinical Biochemistry
- Robert K,Murray (2006) Harper.s illustrated Biochemistry
- Martin A. Crook, (2006): Clinical Chemistry& Metabolic Medicine

6.3- Recommended books

- Course note
- Rc Gupta (2014) Practical biochemistry
- Khalifa, A. (1997): Biochemistry for Medical Students. Fac. Of Med., Ain Shams Univ.
- Bakry, M.A. (1995): Review of Medical Biochemistry. 3rd ed

- Salah, E. (1993): Medical Biochemistry. 2nd. Ed. Fac. of Med., Ain Shams Univ.

6.4- Periodicals, Web sites, . . . etc

- Journal of Biochemistry.
- American Journal of Biochemical Association
- American Journal of Veterinary research
- www.ekb.eg

7- Facilities required for teaching and learning

- Data show
- White board
- Biochemistry laboratory.
- Routine Biochemical kit.
- Faculty central laboratory.

Course coordinator: Prof. Dr. Omayma Ahmed Ragab

Head of department Prof. Dr. Omayma Ahmed Ragab

Signature

Date 1/10/2019

