

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	106(A) I
3.	Level	1 st 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 provides the students with the basic education about the chemistry of Carbohydrates, Lipids and Proteins.

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 Carbohydrates, Lipids and Proteins classifications
- a2- Illustrate the basic knowledge about chemical composition of carbohydrates, lipids and proteins
- a3- List the basis of comparison with other chemical compounds related to carbohydrates, lipids and proteins
- a4- Mention the role of carbohydrates, lipids and proteins in the living cells

b- Intellectual skills

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

- b1- Determine the differences between the types of such basic nutrients found in the nature and in living cells
- b2- Analyze and tracing the appropriate chemical reactions for each compound.

b3- Judge the scheme for such different chemical reactions concerning with them

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 such chemical components.

c2- Prepare the different reagents of such chemical reaction

c.3- Perform and apply the basis of the chemical analysis.

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

3.1- Course contents:

Topic	Lecture hours	Practical hours
Classification of carbohydrates	1	1
Chemistry of Monosaccharide	2	2
Chemistry of Disaccharide	2	1
Chemistry of Polysaccharide	2	2
Chemistry of carbohydrates derivatives	2	2
Classification of lipids	1	1
Chemistry of fatty acids	1	1
Chemistry of simple lipids	1	2
Chemistry of compound lipids	2	2
Chemistry of derived lipids	2	2
Classification of proteins	2	2
Chemistry of amino acids	2	2
Chemistry of protein and nucleoprotein	2	2
Properties of proteins	2	2
Separations of proteins	2	2
Immunochemistry	2	2

Different types of immunity	2	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
Classification of carbohydrates	a1	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Chemistry of Monosaccharide	a2,a4	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Chemistry of Disaccharide	a2,a4	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Chemistry of Polysaccharide	a2,a4	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Chemistry of carbohydrates derivatives	a3,a4	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Classification of lipids	a1	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Chemistry of fatty acids	a2,a4	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Chemistry of simple lipids	a2,a4	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Chemistry of compound lipids	a2,a4	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Chemistry of derived lipids	a3,a4	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Classification of proteins	a1	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Chemistry of amino acids	a2,a4	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Chemistry of protein and nucleoprotein	a2,a4	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Properties of proteins	a2,a4	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Separations of proteins	a2,a3	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Immunochemistry	a3,a4	b1, b2,b3	c1, c2 , c3	d1, d2, d3
Different types of immunity	a3,a4	b1, b2,b3	c1, c2 , c3	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	
and understanding	a1	x	x	x	x	x	x	0	x	x	x	0	x
	a2	x	x	x	x	x	x	x	x	x	x	0	x
	a3	x	x	x	x	x	x	0	x	x	x	0	x
	a4	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	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 General Biochemistry edited by biochemistry staff members

6.2- Essential books (text books)

- Rc Gupta (2014) Practical biochemistry
- R.M.Kamp (2011) Methods in Proteome and Protein Analysis
- dr Acdeb (2008) fundamentals of biochemistry
- R.K. Murray; D.K. Granner; P.A. Mayes, and V.W. Rodwell, (1996): Harper's of Biochemistry. 24th ed. Appleton & Lange. Norwalk, Connecticut, Loss Atlos, California

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

1. Biochemistry laboratory.
2. Routine Biochemical kit.
3. Faculty central laboratory.
4. Computer and internet lab

Course coordinator: Prof. Dr. Omayma Ahmed Ragab

Head of department Prof. Dr. Omayma Ahmed Ragab

Signature

Date 1/10/2019

