Damanhour University

Faculty of Veterinary Medicine

Department: Biochemistry

Biochemistry Course Specifications (2012 - 2013)

Program(s) on which the course is given:	BVSc	
Department offering the program:	---	
Department offering the course:	Biochemistry	
Major or Minor element of programs:	Major	
Academic year /Level:	2nd Year	1st and 2nd semester
Date of specification approval:		

A. BASIC INFORMATION

Title: Biochemistry **Code**: 2ABIO, 2BBIO

Hours:

Lectures 3 hrs/week **Practical** 2 hrs/week **Total** 150 hrs

B. PROFESSIONAL INFORMATION

1. Overall aims of the course:

- This course intends to explore and study of body fluid and animal pigments, mineral metabolism including bones and teeth, structure and function of hormones, enzymes and biological membrane.
- This course intends to explore & study metabolism of naturally occurring biomolecules e.g. proteins and nucleoproteins, nucleic acids, carbohydrates, lipids and other bioactive molecules. This course intends also to explore & study the basic scientific tools used to isolate and characterize these bio-molecules. This course intends to explore & study the basic concept of biological oxidation and xenobiotics and detoxification.

2. Intended Learning Outcomes (ILOs) of the Course:

a. Knowledge and Understanding: The students will be able to:

a1 Understand, on molecular basis, structures and function of hormones and enzymes

a2 Know different biochemical pathways and mechanism of action of different hormone and enzymes and mineral metabolism and also the structure and function of biological membrane and the function of body fluids and animal pigments.

a3 Deeply correlate the difference in sources, natural abundance of these biopolymers and their importance and variability among different species.

b. Intellectual Skills: The students demonstrate the ability (with limited reliance on guidance) to:

- **b1** Differentiate between bio-molecules of different origins and cross-link between that have interrelationship.
- **b2** Discriminate between different methods of separation of bio-molecules with ability to choice the most reliable one.
- **b3** Predict the problem may appear after bio-molecule structure &/or concentration variations and deduce the suggested answer.
- **b4** Prove the ability of meaningful learning rather than simply memorizing isolated facts or concept definitions e.g. connect between molecular structure and drug design.
- **b5** Think, equally in group or individually, with creative ability to interpret results, plan for further steps for solution of a given problem.

c. Professional and Practical Skills: He /she should be able (with limited reliance on guidance) to:

- **c1** Isolate and characterize different bio-molecules, interpret the results.
- **c2** Use appropriate lab wares & equipments safely and competently.
- **c3** Work separately as well as in team work with maximum benefit from the place and minimum loss or lab ware deterioration.
- **c4** Extract the results; conclude comments, present data confidently.
- **c5** Convince others with purpose of the work, the reliability of the results during lab meeting seminars.

d. General and Transferable Skills: The students will able to:

- **d1** Communicate by written, listening, verbal ways
- **d2** Prove the ability to communicate internationally with international organization and institution staff members via e-mail and e-based scientific discussion.
- **d3** Extract facts, build their own impression for the best approach in dealing with given problem.
- **d4** Have skills in administration, selling, team working.
- **d5** Critically evaluate other data or results.

3. Contents:

1st Semester			
Topic	**No. of hours**	**Lectures**	**Practical**
Body fluids and animal pigments	15	9	6
Minerals metabolism including bones and teeth	15	9	6
Hormones	15	9	6
Immunochemistry	15	9	6
Biological membrane	15	9	6
2nd Semester			
Biological oxidation	15	9	6
Carbohydrates metabolism	15	9	6
Protein and nucleoproteins metabolism	15	9	6
Lipid metabolism	15	9	6
Xenobiotics and detoxification	15	9	6
Total	150	90	60

4. Teaching and Learning Methods:

- **4.1** Lectures
- **4.2** Information collection, books, internet, periodicals
- **4.3** Research assignment
- **4.4** Practical
- **4.5** Laboratory visits
- **4.6** Discussion

5. Student Assessment Methods:

	Exam	
5.1	Written Mid-term	To assess the ability to understand and remember knowledge, and intellectual skills
5.2	Written Final-term	To assess the ability to understand and remember knowledge, and intellectual skills
5.3	Practical Final-term	To assess professional and practical skills
5.4	Oral Final-term	To assess skills of analysis and discussion

Assessment Schedule (in each semester):

	Exam	Week
Assessment 1	Written Mid-term	8th
Assessment 2	Written Final-term	16th
Assessment 3	Practical Final-term	16th
Assessment 4	Oral Final-term	16th

Weighing of assessments

	Exam	Per Semester (%)	Total (%)
Assessment 1	Written Mid-term	10	20
Assessment 2	Written Final-term	25	50
Assessment 3	Practical Final-term	10	20
Assessment 4	Oral Final-term	5	10
	Total	50	100

6. List of References:

6.1. Course Notes:

- Department Notes by Staff members

6.2. Essential Books:

- Champ, P.C., Harrey, R.A. (1994): Lippincott's Illustrated Review: Biochemistry, Lippincott's company
- Collins, P.M. (1987): Carbohydrates, Chapman and Hall.
- Kaneko, J.J., Harvey, J.W., Bruss, M.L. (1997): Clinical Biochemistry of Domestic Animals, 5th (ed.), Academic Press, San Diego.
- Murray, R.K., Granner, D.L., Maye, P.A., Rodwell, V.W. (2000): Harper' s Biochemistry 25 (Ed.), McGgraw-Hall Company.
- Ottaway, J.H., Apps, D.K. (1984): Biochemistry 4th (ed.), Bailliere Tindal, Ltd.
- Stroev, E.A. (1989): Biochemistry, Mir Publisher, Moscow.

6.3. Recommended Books:

- Kaneko, J.J., Harvey, J.W., Bruss, M.L. (1997): Clinical biochemistry of domestic animals, 5th (ed.), Academic Press, San Diego.

6.4. Periodicals, websites,….. etc

- Academic Departments of Western Universities

7. Facilities Required for Teaching and Learning must be urgently supplied before approaching our targets

- Fine chemicals, advanced laboratory wares & animals housing facilities with high technical instrumentations capable for accommodating the number of students.
- Access to Internet for Biochemical periodicals requiring subscription.
- Audio-visual aids and Virtual reality facilities.
- Basic learning facilities

Course Coordinator: Dr. A.H. El-Far

Head of Department: Prof. Dr. U.E. Mahrous

Date: