Course Specification Biochemistry (A)

Benha University Faculty of Veterinary Medicine

Program on which the course is given: Bachelor of Veterinary Medical Science

Department offering the course: **Department of Biochemistry**

Academic year / Level: 2nd Year

Date of specification approval: Ministerial Decree No 921, on 15/9/1987.

(Then approved in this recent template by department council on 23/9/2006)

A- Basic Information

Title: Biochemistry Code: Vet 00624 a

Lecture: 2 hours

Practical: 4 hours Total: 6 hours

B- Professional Information

1 – Overall Aims of Course:

The aim of the course is to provide the students with a basic education in the Respiratory chain and Metabolism of Carbohydrates and Lipids.

2 – Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

- a1- Enumerate basic knowledge about cellular energy production.
- a2- Understand basis of the metabolism and energy.
- a3- Illustrate basis of the Anabolism.
- a4- Recognize basis of Catabolism.
- a5- Interpret basis of metabolic disturbances.

b-Intellectual Skills

- b1- Able to know what about the nature of energy in the living cells
- b2- Conclude the relations between the metabolism and diseases
- b3- Judge the changes between the microbial and metabolic diseases

c-Professional and Practical Skills

- c1- Explain how the cell gain energy
- c2-Demonstrate differentiations between the normal and abnormal metabolic pathways
- c3-Acquiring Knowledge about the normal homeostasis of the cellular functions

d-General and Transferable Skills

- d1- Able to be a successful member chemists.
- d2- Presentation of a scientific study in medical laboratories .
- d3- Scientific chemists terms.

3- Contents

Topic	No. of	Lecture	
-	hours		Practical
Biological Oxidations	1	1	-
Oxidative Phosphorelation	10	2	8
High energy bonds	9	1	8
Absorption of carbohydrates	10	2	8
Aerobic oxidation of	1	1	-
carbohydrates			
Anaerobic oxidation of	1	1	-
carbohydrates			
Glycogenolysis and	10	2	8
Glycogenesis			
Gluconeogenesis	8	2	6
Blood sugar level	8	2	6
Glucosuria	2	2	-
Absorption of lipids	2	2	-
Transport of lipids and role	6	2	4
of lipoproteins			
Oxidation of Fatty acids	2	2	-
Biosynthesis of Fatty acids	10	2	8
Depot fat biosynthesis	6	2	4
Obesity	2	2	-
Fatty liver	2	2	-
Total	90	30	60

4- Teaching and Learning Methods

Lectures and lab sessions in which the following facilities are used:

- 4.1- Blackboards and chocks
- 4.2- Whiteboards and markers
- 4.3- Over head projector transparent sheets
- 4.4- Demonstration of chemical reactions.

5- Student Assessment Methods

- 5.1 Practical exam to assess professional and practical skills.
- 5.2 Oral exam to assess knowledge, transferable and intellectual skills.
- 5.3 Written exam to assess knowledge, understanding and intellectual skills.
- 5.4 Quiz and semester work to assess understanding, practical and transferable skills.

Assessment Schedule

Assessment 1	Quiz Examination	Week	6
Assessment 2	Written Examination	Week	15
Assessment 3	Oral Examination.	Week.	15
Assessment 4	Practical Examination	Week	13
Assessment 5	Semester Work	Week	13

Weighting of Assessments

5 % **Ouiz** Examination Written Examination 50 % 20 % Oral Examination. **Practical Examination** 20 % Semester Work

5 %

100% Total

List of References

6.1- Course Notes

A concise guid of Metabolism

6.2- Essential Books (Text Books)

Devlin, T.M.(1993): Textbook of Biochemistry: With Clinical Correlation. 3rd ed. (4th printing). Wiley-Liss: A John Wiley & Sons, Inc., Puplication: New York,

Murray, R.K.; Granner, D.K.; Mayes, P.A. and Rodwell, V.W. (1996): Harper's of Biochemistry. 24th ed. Appleton & Lange. Norwalk, Connexticut, Loss Atlos, California.

Zilva, M.; Charles, F. and Myne, N. (1993): Clinical Chemistry in Diagnosis and Treatment. 6th ed. Saunders, Philadelphia, U.S.A.

6.3- Recommended Books

Bakry, M.A. (1995): Review of Medical Biochemistry. 3rd ed.

Khalifa, A. (1997): Biochemistry for Medical Students. Fac. of Med., Ain Shams Univ.

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

Zahran, M.A. (1994): Lectures on Medical Biochemistry. Alexandria Univ.

6.4- Periodicals, Web Sites, ... etc

Journal of Biochemistry American Journal of Biochemical Association. American Journal of Veterinary Research.

7- Facilities Required for Teaching and Learning

Biochemistry laboratory. Routine Biochemical kit. Faculty central laboratory. Computer and internet lab.

Course Coordinator: Prof Dr. Hussien Abd Al-Maksoud

Head of Department: Prof Dr. Hussien Abd Al-Maksoud

Date

Course Specification Biochemistry (B)

Benha University Faculty of Veterinary Medicine

Program on which the course is given: **Bachelor of Veterinary Medical Science**

Department offering the course: **Department of Biochemistry**

Academic year / Level: 2nd Year

Date of specification approval: Ministerial Decree No 921, on 15/9/1987.

(Then approved in this recent template by department council on 23/2/2006)

A- Basic Information

Title: Biochemistry Code: Vet 00624 b

Lecture: 2 hours

Practical: 4 hours Total: 6 hours

B- Professional Information

1 – Overall Aims of Course:

The aim of the course is to provide the students with a basic education in the Metabolism of Proteins, Protein biosynthesis, Biological fluids and Hormones.

2 – Intended Learning Outcomes of Course (ILOs)

a-Knowledge and Understanding:

- al- Realize knowledge about the nitrogen balance .
- a2- Understand the role of protein in growth
- a3- Illustrate the Anabolism and catabolism of proteins.
- a4- Recognize the role of biological fluids in persistence of life
- a5- summarize hormones chemistry and biological functions

b-Intellectual Skills

- b1- Able to know what about the nitrogen balance and growth
- b2- Determine the relations between the metabolism and diseases
- b3- Analyze the changes between the microbial and metabolic diseases

c-Professional and Practical Skills

- c1- Explain know how the growth occurred
- c2- Shaw differentiations between the normal and abnormal metabolic pathways .
- c3- Read knowledge about the normal homeostasis of the cellular functions .
- c4- Demonstrate the relation between obesity and disturbances in body fluids

d-General and Transferable Skills

- d1- Able to be a successful member chemists.
- d2- Presentation of a scientific study in medical laboratories .
- d3- Scientific chemists terms.
- D4- Problem solving skills.

3- Contents

Topic	No. of hours	Lecture	Practical
Blood nitrogen balance	1	1	
Essential and nonessential amino	10	2	8
acids	10	2	0
Catabolism of amino acids	7	1	6
	, , , , , , , , , , , , , , , , , , ,	1	6
Urea formation	10	2	8
Protein metabolism and kidney	2	2	-
functions		_	
Metabolic disturbances of amino	2	2	-
acids			
Protein biosynthesis	10	2	8
Formation and metabolism of	7	1	6
Purines			
Formation and metabolism of	5	1	4
Pyramidins			
Classification of hormones	2	2	_
Metabolism of steroid hormones	2	2	_
Metabolism of proteious	8	2	6
hormones			
Role of hormones in metabolism	2	2	_
Chemical compositions of urine	8	2	6
Abnormal urine	6	2	4
Chemistry of milk	6	2	4
Chemistry of blood, CSF, Lymph	2	2	_
, Synovial, Pleural, pericardial and s			
Total	90	30	60

4– Teaching and Learning Methods

Lectures and lab sessions in which one or more of the following facilities are used:

- 4.1- Blackboards and chocks
- 4.2- Whiteboards and markers
- 4.3- Over head projector transparent sheets
- 4.4- Demonstration of chemical reactions.

5- Student Assessment Methods

- 5.1 Practical exam to assess professional and practical skills.
- 5.2 Oral exam to assess knowledge and information and intellectual skills.
- 5.3 Written exam to assess knowledge, information and intellectual skills.
- 5.4 Quiz and semester work (demonstration for some tests) to assess understanding, practical and transferable skills.

Assessment Schedule

Assessment 1	Practical Examination	Week	13
Assessment 2	Oral Examination.	Week.	15
Assessment 3	Written Examination	Week	15
Assessment 4	Quiz Examination	Week	6
Assessment 5	Semester Work	Week	13

Weighting of Assessments

50 %	Written Examination
20 %	Oral Examination.
20 %	Practical Examination
5 %	Semester Work
5 %	Quiz Examination
100%	Total

6- List of References

6.1- Course Notes

A concise guide of Metabolism

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6.4- Periodicals, Web Sites, ... etc

Journal of Biochemistry American Journal of Biochemical Association. American Journal of Veterinary Research.

7- Facilities Required for Teaching and Learning

Biochemistry laboratory.

Routine Biochemical kit.

The Faculty central lab.

Computer and internet lab.

Course Coordinator: Prof Dr. Hussien Abd Al-Maksoud

Head of Department: Prof Dr. Hussien Abd Al-Maksoud

Date: