هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	**Basics to Medical Biochemistry II -**
Course Code:	**4810121-2**
Program:	**Medical Path**
Department:	**Common First Year Deanship**
College:	**Applied of Medical Sciences**
Institution:	**Umm Al-Qura University**

Table of Contents

A. Course Identification

1. Credit hours: 2
2. Course type **a.** University ☐ College ☐ Department ■ Others ☐ **b.** Required ■ Elective ☐
3. Level/year at which this course is offered: 2/ common 1st year
4. Pre-requisites for this course (if any)**: None**
5. Co-requisites for this course (if any)**: None**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	2	100
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	24
2	**Laboratory/Studio**	
3	**Tutorial**	4
4	**Others** (specify) student presentation (assignments)	4
	Total	32

B. Course Objectives and Learning Outcomes

1. Course Description

- *The course is one semester course of 2 credit hours with total 30 contact hours.*
- *Fifteen lectures are provided to the students, covering the biochemistry principles of metabolism of carbohydrates, lipids, and proteins. In addition to bioenergetics of cells.*

The course explores the biochemical mechanisms of different tissues in different physiological conditions.

2. Course Main Objective

This course aims to:

- *Elucidate the basic metabolic concepts underlying normal and abnormal cell behaviours.*

- *Describe the medical significance of the metabolism of different biomolecules; carbohydrates, lipids, and proteins.*

Understand the bioenergetics of the cells to perform its physiological functions.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	to understand the key metabolic processes occurring in the human body that could contribute to the understanding and explanation of pathological phenomena.	
1.2	To describe the various control and integrating mechanisms of diverse biochemical events in different metabolic processes, and to understand normal and abnormal human metabolism	
1.3	To explain the hormonal, non-hormonal regulation and the points of controlling of these major metabolic pathways.	
1.4	To correlate the impact of any biochemical abnormality to the medical status	
1.5	to explore the biochemical basis of diseases, and figure out how to correlate biochemical events to some medical problems.	
2	**Skills :**	
2.1	to develop of scientific search skills and writing of a scientific medical subject	
2.2		
3	**Values:**	
3.1	to develop a team work by scientific search skills and writing of a scientific medical subject	
3.2		

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to the course: (scope, objectives, and evaluation)	2
2	Biochemical Aspects of Enzymes.	2
3	Chemical and Energetic Transformation in Cells	2
4	Carbohydrate Metabolism	8
5	Lipid Metabolism	6
6	Protein Metabolism	6
7	Tutorial	2
8	Student presentation	4
Total		32

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	to understand the key metabolic processes occurring in the human body that could	Intertactive lecture	MCQ – written exam

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	contribute to the understanding and explanation of pathological phenomena.		
1.2	To describe the various control and integrating mechanisms of diverse biochemical events in different metabolic processes, and to understand normal and abnormal human metabolism	Intertactive lecture	MCQ – written exam
1.3	To explain the hormonal, non-hormonal regulation and the points of controlling of these major metabolic pathways.	Intertactive lecture	MCQ – written exam
1.4	To correlate the impact of any biochemical abnormality to the medical status	Intertactive lecture	MCQ – written exam
1.5	to explore the biochemical basis of diseases, and figure out how to correlate biochemical events to some medical problems.	Intertactive lecture	MCQ – written exam
1.6			
2.0	**Skills**		
2.1	to develop of scientific search skills and writing of a scientific medical subject	Student presentation	Rubric
2.2			
…			
3.0	**Values**		
3.1	to develop a team work by scientific search skills and writing of a scientific medical subject	Student presentation	Rubric
3.2			
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	**Mid-term exam**	7,8	35%
2	**Final exam**	17	50%
3	Student presentation	13,14	15%
4			
5			
6			
7			
8			

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

- The student has all rights to contact the lecturer or coordinator by their e-mails or during their office hours for academic advices or consultations, and response to students' feedback.
- Staff supervision for the groups of the students in performing their assignments.

Tutorial is carried out by the end of the course to summarize and answer all questions of the students.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	• **Text book of Biochemistry with Clinical Correlations**, Seventh ed. Devlin TM (2010). Ed. Wiley –Liss New York **Principles of Biochemistry**, A.L. Lehninger. D.L.Nelson and M.M. Cox, (2008) Worth Publication s. New York.
Essential References Materials	• **Harper's Illustrated Biochemistry**, 28edition (2006) Robert K. Murray, David A Bender, Kathleen M. Botham , Peter J. Kennelly, Victor W., Rodwell , P. Anthony Weil, Publishers The McGraw-Hill Companies. **Instant Notes Biochemistry** , Second Ed(2007) by B.D. Hames & N.M. Hooper
Electronic Materials	• *Biochemical Society, www.biochemistry.org* • *Association for Clinical Biochemistry (ACB), www.acb.org.uk* • *Biochemistry website, www.bio.net/bionet* • *The ChemWeb Chemistry Portal, www.chemweb.com* • *Medscape, www.medscape.com* • *Biomedical central, www.biomedcentral.com/bmcpublichealth* • *www.kumc.edu/biochemistry/resource.html* • *www.medlib.iupui.edu/ref/biochem.htm* • *www.ag.unr.edu/shintani/bch400-600/Chapter%20notes%20current.htm* • *www.medicaleducationonline.org/component/option,com_docman/task,cat_view/gid,101/Itemid,37/* • *www.bcs.whfreeman.com/thelifewire/content/chp00/00020.html* • *www.science.nhmccd.edu/biol/ap1int.htm* • *www.johnkyrk.com/index.html* • *www.science.nhmccd.edu/biol/bio1int.htm* • *http://www.ag.unr.edu/shintani/bch400-600/Chapter%20notes%20current.htm* • *http://www.medicaleducationonline.org/component/option,com_docman/task,cat_view/gid,101/Itemid,37/* • *http://bcs.whfreeman.com/thelifewire/content/chp00/00020.html* • *http://science.nhmccd.edu/biol/ap1int.htm* • *http://www.johnkyrk.com/index.html* • *http://science.nhmccd.edu/biol/bio1int.htm*
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	**Class rooms with projector**
Technology Resources (AV, data show, Smart Board, software, etc.)	data show, Smart Board, software
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Evaluation questionnaires for the student's opinions about teaching process by the end of the semester are done.	student	questionnaires
Evaluation questionnaires posed by the staff for learning process at the end of the semester.	staff	questionnaires

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Vice Dean of Common First Year for Academic Affairs, Dr Ahmad Fawzi Arbaeen
Reference No.	-
Date	27/3/2022