



Beni-Suef University
Faculty of Dentistry
Quality Assurance Unit



Course Specification

University: **Beni-Suef** Faculty: **Dentistry**
Course Title: **Biochemistry** Course code: **MBC2**
Program on which the course is given: **Bachelor's degree of Dentistry, Graduate program**
Department offering the course: **Medical Biochemistry and Molecular Biology Department, Faculty of Medicine**
Academic year: **1st**
Date of specification approval: **September 2023**

A- Basic Information:

Academic Year:	2023-2024
Course Code:	MBC2
Course Theoretical (contact hours):	2hr*30w
Practical (contact hours)	2hr *30w
Total Hours: -	4h.
Prerequisite if present:	No

B- Professional Information:

1- Aims of course:	1. a To enable the student to be oriented with the biochemical importance of macro- and micronutrients as well as the structure and functions of enzymes.
	1. b To enable the student to illustrate and/or describe the metabolic pathways of macronutrients and nucleotides.
	1. c To enable the students to point-out hereditary and acquired metabolic disturbances and their biochemical laboratory and clinical outcomes.
	1. d To enable the student to point out the bioenergetics of the concerned metabolic pathways under different physiological circumstances and their integrator regulations with other working metabolic pathways.

	<p>1. e To enable the student to describe major body fluids composition and their clinical impact.</p>
	<p>1. f To enable the student to interpret medical laboratory reports.</p>
<p>2- Intended Learning Outcomes of the Course (ILOs):</p>	
<p>a- Knowledge and understanding:</p>	<p>a. 1) Describe the chemical structure and properties of the major metabolites.</p>
	<p>a. 2) Describe different metabolic pathways and the related errors.</p>
	<p>a. 3). identify an appreciation of the breadth of material covered in modern biochemistry.</p>
	<p>a. 4) Describe mechanisms of biochemical processes.</p>
	<p>a. 5) Describe and recognize of the significance of biological specificity at the molecular level.</p>
	<p>a. 6) Match biochemistry to cellular and organismal processes.</p>
	<p>a. 7) Identify an understanding of how the principles of genetics underlie much of the basis of modern molecular biology.</p>
	<p>a. 8) Describe important biochemical features that distinguish prokaryotes from eukaryotes.</p>
	<p>a. 9) Identify some ethical issues concerning the advances in the Biosciences and their impact on the society.</p>
<p>b- Intellectual Skills (Higher Cognitive Skills) :</p>	<p>b. 1) Evaluate the different Biochemical pathways, and indicate the site of error; if present.</p>
	<p>b. 2) Choose the possible investigations needed for diagnosis.</p>
	<p>b. 3) Collect biochemical information from a variety of sources.</p>
	<p>b. 4) Plan, execute and present an independent piece of work (e.g. a project) within a supported framework.</p>
	<p>b. 5) create basic manipulation of biochemical data (including some statistical analysis if appropriate), and to work safely in a laboratory environment [BM].</p>
	<p>b. 6) Demonstrate that they have basic strategies that enable them to update their knowledge of biochemistry [BM].</p>

	b. 7) Evaluate the different approaches taken in the various areas of biochemistry.
	b. 8) demonstrate evidence and judge the logic of evidentially based arguments
	b. 9) Critically evaluate the primary literature in particular areas of biochemistry
c- Professional and practical skills:	c. 1) Demonstrate basic competencies in a range of practical biochemical techniques including data collection, and analysis and interpretation of those data
	c. 2) Apply basic manipulation of biochemical data (including some statistical analysis if appropriate). Such manipulations include: balances, centrifuge, pipettes, solution preparation, etc
	c. 3) Practice safely in a laboratory environment, manage time effectively and pursue personally set objectives.
	c. 4) Use basic and sophisticated laboratory equipments in different techniques, e.g. chromatography, molecular biology, electrophoresis, tissue culture, RIA and ELISA
d- General and Transferable Skills:	d. 1) Arrange , execute and present an independent piece of work (e.g. a project) within a supported framework.
	d. 2) illustrate the knowledge of biochemistry.
	d. 3) Identify a range of presentational techniques and communication skills including the ability to write for a general audience.
	d. 4) show the ability to communicate ideas and experiments to others and to debate relevant scientific and ethical issues.
	d. 5) Assess the value of different approaches to their discipline and in some cases to topics outside their discipline.
	d. 6) Develop the interpersonal skills that will allow them to participate in co-operative group planning and making decision.

	d. 7) Identify the applicability of biochemistry to their progressing careers.	
	d. 8) Evaluate standard C&IT packages (word-processing, email, WWW and spreadsheets), and demonstrate computer literacy.	
3- Course Content:		
Topics	No. of hours	
	Lectures	Practical/ tutorial
Introduction to nutrition & Bioenergetics	2	Liver Functions
Metabolism of carbohydrates	4	Blood glucose Urine Report
Diabetes Mellitus	2	Diabetes Mellitus
Metabolism of lipids	2	HMP Pathway
Metabolism of protein I	2	Myocardial Infarctions
Metabolism of protein II & Metabolic integrations	2	Calcium and phosphorus
Metabolism of heme	2	Tutorial
Nucleotides and Nucliec acids: Basic principles ,DNA ,RNA Metabolism of purines and pyrimidines	2	Tutorial
Replication ,Transcription and Translation	2	
regulation of gene expression	1	Tutorial
Recombinant DNA	1	
Vitamins	2	
4- Teaching and Learning Methods:	4.a) Lectures (2 hrs/ week)	
	4.b) practical sessions (2 hrs/week)	
5- Teaching and learning methods for disables:	Not available	
6- Student Assessment:		

a) Tools:	1. written exam
	2-practical exam
	3-oral exam
	4- Contentious assessments
c) Weighting of Assessments:	Written Examination 40 %
	Oral exam 20%
	Practical Examination: 20 %
	Contentious assessments (midterm and quizzes): 20%
7- List of References:	
- Course Notes:	<ul style="list-style-type: none"> • Medical biochemistry and molecular biology (beni suef University)
- Essential Books (Text Books):	<ul style="list-style-type: none"> • Lippincott's illustrated biochemistry • Harber's illustrated biochemistry
- Recommended Books:	<ul style="list-style-type: none"> • Lippincott's illustrated biochemistry • Harber's illustrated biochemistry
- Periodicals, Web Sites, etc:	<ul style="list-style-type: none"> • http://themedicalbiochemistrypage.org/ • http://www.biochemistry.org/
Teaching Facilities:	<ul style="list-style-type: none"> • Lectures halls • Labs • library

Course Coordinator:

Lecturer: Naglaa Adli Abdelazem
Beni-Suef University

Head of Department:

Prof Dr. Ghada Mahmoud Abdel-aziz,
Beni-Suef University

Date : September 2023

