Beni-Suef University
Faculty of Dentistry
Quality Assurance Unit

Course Specification

University: **Beni-Suef** Faculty: **Dentistry**
Course Title: **Biochemistry 2** Course code: **MBC122**
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 level: **1st** Semester**:2nd**
Date of specification approval: **September 2023**

A- ***Basic Information*****:**

Academic Year:	**2023-2024**
Course Code:	**MBC122**
Course Theoretical (contact hours):	2hr*16w
Practical (contact hours)	2hr *16w
Total Hours: -	3h.
Prerequisite if present:	Biochemistry 1

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 metabolicpathways 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.

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

	b. 7) Evaluate the different approaches taken in the various areas ofbiochemistry.
	b. 8) demonstrate evidence and judge the logic of evidentially based arguments
	b. 9) Critically evaluate the primary literature in particular areas ofbiochemistry
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 pursuepersonally set objectives.
	c. 4) Use basic and sophisticated laboratory equipments in different techniques, e.g. chromatography, molecularbiology, electrophoresis, tissueculture, RIA and ELISA
d- General and Transferable Skills:	d. 1) Arrange , execute and present an independent pieceof 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 ageneral audience.
	d. 4) show the ability to communicate ideas and experiments toothers 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 toparticipate in co-operative group planning and making decision.

	d. 7) Identify the applicability of biochemistry to their progressingcareers.
	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
Metabolism of protein I	3	Myocardial Infarctions
		Calcium and phosphorus
Metabolic integrations and Metabolism of heme	2	Tutorial
Nucleotides and Nucleic 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:	Lectures (2 hrs/ week)
	practical sessions (2 hrs/week)
	Discussion sessions
	Class activities
	Assignments
5- Teaching and learning methods for disables:	Not available
6- Student Assessment:	

a) Tools:	1. written exam
	2-practical exam
	3-oral exam
	Attendance/ continuous assessments
c) Weighting of Assessments :	Written Examination 40 %
	Oral 10%
	Practical Examination: 20 %, Attendance/ continuous assessments (midterm, quizzes) 20%

7- List of References:

- Course Notes:	• Medical biochemistry and molecular biology (beni suef University)
- Essential Books (Text Books):	• Lippincott's illustrated biochemistry • Harber's illustrated biochemistry
- Recommended Books:	• Lippincott's illustrated biochemistry • Harber's illustrated biochemistry
- **Periodicals, Web Sites, etc**:	• http://themedicalbiochemistrypage.org/ • http://www.biochemistry.org/
Teaching Facilities:	• 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

September 2023