



Course Syllabus - MBBCh

1. Course title: Biochemistry – Y1-S2		Course code: BIO1202
2. Credit/contact hours:	102	
3. Number of weeks	16	
4. Level/year at which this course is offered:	Year 1- Semester 2	
5. Pre-requisites for this course (if any): Biochemistry Y1S1		
6. Co-requisites for this course (if any): No		

Course Description

This course discusses the molecular basis of cell function and the biochemical basis of structures and functions of the body.

Special emphasis is given to disease states with biochemical or molecular biological bases and genetic abnormalities.

The broad objective of the course is to contribute to the formation of a comprehensive well-integrated foundation of basic medical knowledge for concurrent and future comprehension of pathogenesis, clinical presentation, complications, diagnoses and the use of different therapeutic modalities.

Practical laboratory sessions reinforce basic theoretical concepts and demonstrate the biochemical bases of key metabolic diseases. Clinical case scenarios and presentations with group discussions are used for enhancing the development of integrated application of biochemical knowledge in understanding disease processes and presentation.

Course Learning Outcomes

CLOs		Aligned-PLOs
1		
K1	Describe the medically significant metabolic pathways in carbohydrate, lipid, protein and nucleic acids in the body and how they are regulated.	A2

CLOs		Aligned-PLOs
K2	Discuss the changes that affect different metabolic pathways in the human body in response to physiological or pathological demands and how they are integrated by hormones and other regulatory molecules,	A2
S1	Estimate the blood and urine level of the relevant bio-molecules and Correlate the changes in their concentrations of bio molecules in blood and urine with clinical conditions.	B2
K3	Analyze the relation of metabolic disorders to different relevant pathophysiological pictures in clinical problems.	A3

Course Delivery Plan

No	List of Topics	Contact Hours
1	Carbohydrate Metabolism	26
2	Lipid metabolism	28
3	Protein Metabolism	12
4	Integration of metabolism / Metabolic disorders	12
5	Nucleotide metabolism, porphyrin and heme synthesis	6
6	Clinical Chemistry	14
Total		

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	Skills		
K1	Describe the medically significant metabolic pathways in carbohydrate, lipid, protein and nucleic acids in the body and how they are regulated.	Lectures, Laboratory practical lessons	Written exam (Short account &MCQ), oral, practical
K2	Discuss the changes that affect different metabolic pathways in the human body in response to	SGD, SDL	Written exam (Short account &MCQ), oral, practical

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	physiological or pathological demands and how they are integrated by hormones and other regulatory molecules,		
S1	Estimate the blood and urine level of the relevant bio-molecules.	SP,CAL	Written exam (Short account &MCQ), oral, practical
S1	Correlate the changes in their concentrations of bio molecules in blood and urine with clinical conditions.	Lecture, CBL	Class sharing, Scientific activity
K3	Analyze the relation of metabolic disorders to different relevant pathophysiological in clinical problems.	Lecture, CBL	Written exam (Short account &MCQ), oral, practical

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Year assessment	16	30
2	Oral	16	15
3	Practical	16	20
4	MCQ	16	35

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

Learning Resources and Facilities

1.Learning Resources

Required Textbooks	<ul style="list-style-type: none"> Murray..., R.K., Granner, D., & Rodwell, V.W. (2003). Harper's Illustrated Biochemistry. Armutak, E.I. (2021). Lippincott's Illustrated Reviews: Biochemistry 6 th Edition. Janson, L. W., & Tischler, M. E. (Eds.). (2012). <i>The big picture: medical biochemistry</i>. McGraw-Hill Medical. Lieberman, M.A., & Ricer, R.E. (2020). Board Review Series: Biochemistry, Molecular Biology, and Genetics, 7e.
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Essential References Materials	<ul style="list-style-type: none"> Lecture notes are prepared by the Department and made available to students both in printed and electronic forms. The later is presented on the LMS used by DMC.
Electronic Materials	<ul style="list-style-type: none"> AMBOSS Access Medicine
Other Learning Materials	Library

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Laboratory, Classrooms, Demonstration rooms
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show, Smart board, Wi-Fi
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Test tubes, Chemicals, Heaters

Instructors:

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