

# Course specification of applied biochemistry

## **A-Administrative Information**

**Course Title:** Applied Biochemistry

**Code:** PEDHI 813

**Department giving the course:** Medical Biochemistry Department

**Program on which the course is given:** Master. degree in pediatric Hepatology

**Department offering the program:** Pediatric Hepatology Department

**Semester:** 1st part

## **B-Professional information**

### **1 – Overall aims of course**

The two major concerns for workers in the health science – and particularly physicians – are the understanding and maintenance of health and the understanding and effective treatment of diseases. Biochemistry impacts enormously on both of these fundamental concerns of medicine. In fact, the interrelationship of biochemistry and medicine is a wide two-ways street. Biochemistry studies have illuminated many aspects of health and disease, and conversely, the study of various aspects of health and disease has opened up new areas of biochemistry.

Shared science and its subjects must be chosen by the Biochemistry department

1. To help students to become familiar with the biochemical knowledge that will assist students in understanding biochemical alteration in health and disease.
2. To provide students with good knowledge about inborn error of carbohydrate, lipids, protein and heme metabolism.
3. To able the students to be oriented with concepts of genetic disease, hormones, immunoglobulin, acute phase reactant proteins, vitamins and minerals and how these fields gave us a new perspective and new technology used in the diagnosis, treatment and new drugs design.

### **2 – Intended learning outcomes of course (ILOs)**

#### **A-Knowledge and Understanding:**

*By the end of the course, students should be able to:*

- identify the inborn error of CHO metabolism by its genetic defect
- compare different types of lipoproteins disorders

- relate the metabolic disorders to its amino acid inborn errors ( melatonin and melanin)
- Describe the biochemical basis of prophyria.

**B. Intellectual skills:**

*By the end of the course, students should be able to:*

- b1 Apply the etiology of endocrine disturbance in a given case study report.
- b2 Analyze the application of vitamins as antioxidants.
- b3 Suggest the possible investigations needed for diagnosis of minerals deficiency..
- b4 Point out the specific immunoglobulin related to different diseases.

**C. Professional skills:**

*By the end of the course, students should be able to:*

- C1. Interpret signs, genetic and biochemical basis of xeroderma pigmentosum
- C2. Point-out the application of acute phase reactant proteins in diagnosis.

**D. General skills:**

1. Work effectively in a group in lab or during preparation of seminars.
2. Respect the role of staff and co-staff members regardless of degree or occupation

**3-Contents**

<b>Total</b>	<b>Practical</b>	<b>lectures</b>	<b>Topic</b>
3.5	1.5	2	-Overview on CHO metabolism and its inborn error
3.5	1.5	2	-Overview on lipid and lipoprotein metabolism and its inborn error
			-Overview on protein metabolism and its

3	1.5	1.5	inborn error
	1.5	2	-Haem metabolism and its inborn error
3.5			
3.5	1.5	2	Hormones
3.5	1.5	2	-Vitamins
			-Minerals
3.5	1.5	2	Immunoglobulins
4.5	1.5	3	
3.5	1.5	2	xeroderma pigmentosum
5.5	1.5	4	Acute phase reactant proteins
37.5	15	22.5	<b>Total</b>

#### **4-Teaching methods: (Lectures: 1 + Practcal: 1)**

#### **5-Assessment methods:**

Written Examination for assessment of ILOs number A1-A4, B1-B4,C12.

Oral examination for assessment of ILOs number: A1-A4, B1-B4,C1-2.

Log book for activities for assessment of mainly practical & transferrable skills.

#### **Assessment schedule:**

(written and oral exam with marks)

#### **Percentage of each Assessment to the total mark:**

Written exam: 50%

Oral exam: 30%+ practical 20%

#### **6-List of references**

**6.1- Course Notes:** Lecture notes prepared by the staff members in the department.

**6.2- Essential Books (Text Books):** Harpers in Biochemistry.

**6.3- Recommended Books:** lipnocott in Biochemistry

**7-Resources / Facilities required for teaching and learning to achieve the above ILOs**

New advanced laboratory facility and equipment to help teaching

- Overhead projectors - Computers - Microscope slides
- Laboratories instruments - Internet club

**Program coordinator:** Prof. Dr Hala El Said

**Dean:** Prof. Dr. Magdy Khalil

**Head of Quality Assurance Unit:** Dr . wessam saber morad